Consciousness

A Deeper Scientific Search

Papers read at a seminar held at the
Ramakrishna Mission Institute of Culture,
Golpark, Kolkata, India on
13, 14 and 15 January 2006

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Kolkata, India on 13, 14 and 15 January 2006

Editors
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Publisher's Note

An International Seminar on 'Philosophy and Science: an Explanatory Approach to Consciousness' and another International Seminar on 'Life, Mind and Consciousness were held under the aegis of the Ramakrishna Mission Institute of Culture in February 2002 and January 2004, respectively. The published reports of the proceedings of these two Seminars created some stir among the people who are interested in the study of Consciousness. Consequent to these, an International Workshop-cum-Seminar was organized on the topic 'Consciousness: A Deeper Scientific Search' here from the 13th to the 15th January 2006. A special session was held on the 8th January 2006 with Prof Samdhong Rinpoche, Kalon Tripa, Chairman of the Cabinet, Central Tibetan Administration of His Holiness the Dalai Lama. Learned specialists in science and philosophy and veteran practitioners of religion representing different schools actively participated.

The greatest problem facing perhaps all of sciences is to solve the long-intractable brain-mind conundrum: How does material brain produce our immaterial but vital sense of awareness? How the brain's systems work together to create the subjective experiences of the mind – the self-reflective thoughts? For a long time the topic was left to philosophers and religious practitioners, but of late scientists of several disciplines, particularly the neuroscientists have taken it up in right earnest. Recent advances in imaging techniques have enabled neuroscientists to make some remarkable progress, but these achievements too have not enabled them to understand the higher reaches of consciousness upheld by the Indian Yogis of yore. The Workshop-cum-Seminar have made it possible to have some worthwhile exchange of views

which I hope, will provoke scholars to proceed further in understanding Consciousness.

We are grateful to the Ministry of Higher Education, Govt. of West Bengal for their active support and financial assistance for the Seminar. Also, we are grateful to the Council of Scientific and Industrial Research, New Delhi and to M/s. East India Pharmaceutical Works Ltd., Kolkata for their financial help to partly meet the expenses.

The entire proceedings of the Workshop-cum-Seminar have been edited by Prof Jonathan Shear and Prof S.P.Mukherjee, and I am grateful to both of them. We also extend our thanks to Smt. Monica Sengupta for her help to bring out this volume.

I hope this brief study on Consciousness will be well received by scholars as well as others interested in this subject.

Swami Prabhananda

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PROLOGUE TO THE SEMINAR

8 January 2006

Welcome Address

SWAMI PRABHANANDA

Even though the topic 'Consciousness' was discovered and nurtured by the Indian seers for several thousands of years, it remained almost untouchable with the Western philosophers till the other day. However, physicists, mathematicians and other scholars belonging to different scientific disciplines started investigating seriously about the nature of consciousness. Western philosophers who had given up the earlier inhibition have come forward. We too have joined in this. Many of you know that earlier in 2002, we organized an International Seminar on Philosophy and Science – An Exploratory Approach to Consciousness. It was held on 8th and 9th of February 2002. It was followed by another International Seminar on the theme: Life, Mind and Consciousness, held from 17 to 18 January 2004. The proceedings of both the Seminars were published.

We know that consciousness has three dimensions: (a) ordinary consciousness, (b) damaged or deficient consciousness, and (c) higher reaches of consciousness. Appreciating these dimensions, we have invited this time experts who have specialized through spiritual practices in understanding and realizing consciousness, fully or partly.

People belonging to different traditions from different parts of the world are going to join. Also, we have invited expert neuro-scientists who will present their experimental accounts and also invited philosophers and scientists. Each will present a paper. All these presentations will be followed by discussions.

We are fortunate to have among us Prof Samdhong Rinpoche, Kalon Tripa, Chairman of the Cabinet, Central Tibetan Administration of His Holiness the Dalai Lama. I would request

our Co-ordinator to introduce him elaborately. Prof Rinpoche will remain busy during the period of 13 to 15 January, 2006 when we are going to have the Seminar. We have arranged a special session, almost a prologue to the International Workshop-cum-Seminar on Consciousness to be held here from 13 to 15 January, 2006. Prof Rinpoche will also deliver a popular lecture on meditation according to the Tibetan mystic tradition tomorrow at 6 p.m. I invite all of you to attend the same.

Prof. Jonathan Shear, Department of Philosophy, Virginia Commonwealth University, has taken keen interest in our project and joined in the last International Seminar held in 2004. At our request, he is going to serve as the Co-ordinator of this Special Session. We are grateful to him. I heartily welcome all of you, particularly Prof. Rinpoche, once again. I now request Prof. Shear to conduct this important session.

Consciousness : A Deeper Scientific Search

SAMDHONG RINPOCHE

Revered Swami Prabhanandji, the other swamijis, Prof. Jonathan Shear, distinguished academicians and friends:

I must express my heartfelt gratitude to Swami Prabhanandji and the Ramakrishna Mission Institute of Culture for giving me this unusual honour to be here and give a separate talk as a part of the international seminar-cum-workshop which is going to take place in a few days. I am not qualified to be given such a special treatment and allowed to be a part of the deliberations of this seminar, especially on such an important and difficult subject. I am thankful to you all.

The year 2006 is not very old, so I may take this opportunity to wish you all a very happy and prosperous New Year.

I must apologize for not having a prepared presentation worthy of consideration by this scholarly world. I have come back to this Institute after about 5 years. I used to keep coming to Calcutta, particularly in the 1990s. I had been a member of the Asiatic Society General Council for two terms, so we had regular meetings. I also used to stay here whenever I came to Calcutta for other academic purposes to the Mahabodhi Society, the Asiatic Society, the Jadavpur University and the Calcutta University. When I left Sarnath in 2001 and shifted to South India and then, again to Dharamsala, I lost touch with this part of the world.

Although, initially I was feeling that I would not be able to participate in the seminar, I was unable to say "no" right away to Swamiji. I accepted his invitation and sent my consent to come and attend, but thereafter, life went on as usual and it was not possible for me to prepare a paper to present here. Secondly, as a Buddhist monk, and having spent the major portion of my life in

academia, something must be expected from me in this session. But, as I said, I have nothing worthwhile to present for your consideration, because I have a two-fold handicap. The first is that, I have not been in touch with my academic pursuits for quite some time; and the second is that, I am not proficient in the language of this seminar. English is a difficult language for me because I do not use it very often, so I face lack of vocabulary and expressions, particularly in the fields of spirituality and philosophy. The vehicle of language or of words is at many times limited, and sometimes creates misunderstanding and miscommunication. With these two handicaps, I am venturing to share something with you, so please bear with me. If I have some difficulty finding the right words, I will ask Prof Pathak and Prof Mukhopadhayaya for help. Both of them have been my *kalyâna mitras* for a long time, and they are very well-versed in the Buddhist tradition and also in philosophy, in general.

Before dwelling on the subject, I would like to discuss very briefly two of my inconveniences. The first is the topic, "Consciousness—A Deeper Scientific Search", and the second is the expression, "Tibetan Buddhist Tradition", or "An experience according to the Tibetan Buddhist Tradition".

Deeper Scientific Search—I do not know whether in the field of consciousness, and similar fields that are not material or are not entirely connected with material things, one can have a scientific search. That is a question for me. The word 'scientific' is commonly used everywhere and many of my Buddhist friends use to say rather proudly that Buddhism is a scientific religion. I always differ with them. Can a religion or spirituality be scientific? Scientific means things are to be examined through ordinary consciousness or the ordinary senses, with the help of material instruments and with experimentation on the actuality of their material existence. Can spirituality or consciousness or mind, which is completely different from matter and which does not have any material existence, be scientifically searched? I pose the question before this august audience.

If it is possible that spirituality or the mind, or consciousness can be searched through scientific methodology or instruments, then I should say that science has to rise above its present dogmas. In this world, many religious traditions have unfortunately spread much dogma and blind faith. Later on, scientific knowledge has created much more blind faith and many things are taken for granted without any examination. So, the scientific blind faith is much more dangerous for human evolution, for the evolution of mind. It is very easy to be carried away by the term 'scientific'. I would like to be allowed to offer a caution here. Should we examine everything through a scientific search or examination? May be, but I am asking whether it is possible or not. It is an important question.

Secondly, the expression, 'Tibetan Buddhism' or 'Tibetan Buddhist Tradition' is coined by the Western scholars who classify religion and spiritual tradition, particularly Buddhism by geographical boundaries. Buddhist studies in the West refer to Chinese Buddhism, Tibetan Buddhism, Vietnamese Buddhism, Japanese Buddhism and so forth. Actually, Buddhism does not belong to any particular geographical land or nation. After all, if it is to belong to any particular land or nation, then it should belong to India.

Buddha was born in India. Moreover, he taught his Dharma in India, so we may call it Indian Buddhism. But, no other religion has this kind of geographical divisions. Academicians do not refer to Indian Islam, Pakistani Islam, Chinese Islam or Afghanistani Islam. Islam is Islam. Similarly, the same is with Christianity. There may be a few different orthodox traditions, but there is no Indian Christianity, European Christianity or American Christianity. Hinduism is also prevailing in many places, yet one does not hear about Nepalese Hinduism or Indian Hinduism. But the Western scholars have coined the term 'Tibetan Buddhism', and now it has become a part of the language and common expression and everybody uses it. Sometimes it creates the misunderstanding that Tibetan Buddhism is something different from the Buddhism prevailing in India and that there are a lot of local influences into that. Such a misunderstanding results in lots of confusion.

For the last 1300 years, Tibetan scholars exerted utmost effort to keep Buddhism free from any local influences or amendments. They always referred back to Indian treatises. The *Shāstras* and *Āgamas* were translated from Indian languages, largely from Sanskrit, and also from other Indian languages. The *Kagyur* and *Tangyur*, a voluminous treasured collection, was translated very, very faithfully. I think, in the world history of translation work, the Tibetan translation work is outstanding, unparalleled, because the language itself was purposely designed and developed to suit the translation of treatises from Indian languages. Therefore, whatever is expressible in Sanskrit, is also expressible in Tibetan. The early kings even laid rules for translation work. Not a single Indian *Pandit*, no matter how proficient in the Tibetan language, could translate treatises alone. A Tibetan translator had to work with him. Likewise, no Tibetan translator was allowed to translate (Prof. Pathak knows all these details) into Tibetan without the guidance of an Indian *Pandit*. So, it was the joint work of at least two scholars in order to ensure accuracy.

There were also rules regarding the methods of translation. One could slightly reorganize the words in a sentence. If it was a *shloka,* one could not go beyond the words of the *shloka*. If it was a *gadya* or prose, one had to remain confined within a paragraph. One could not go beyond a paragraph. If there was a Sanskrit word or expression with more than one meaning, then the original Sanskrit word or expression had to be kept. There were many rules ensuring that the translation into Tibetan was very accurate and authentic. Time and again, they referred back to India. Even in the 11th century, Dipankara Shrijnana was invited to Tibet just to see whether any misunderstanding of the local people or commentators had polluted Tibetan Buddhism. Kashmiri Pandit Shilabhadra Shrijnana, a very renowned scholar, Pandit Smirtijnana and many other famous scholars of the later period were invited to Tibet.

Tibetans kept on coming to India in order to protect the Buddhist tradition and to keep it as pure as it was in the Nalanda and the

Taxilan traditions. Thus, Tibetan Buddhism or the Tibetan religious tradition or the Tibetan philosophical tradition maintained the Indian tradition one hundred percent as it was. We have not tried to find any shortcuts or to summarize or to make any alteration to suit the local people. Some Tibetan nationalists feel that it is not correct. They think that the Tibetans must have some originality and should not be dependent entirely on the Indian tradition, so far as Dharma and culture are concerned. But, it is a fact that Tibetans have kept the Indian tradition entirely as it is, without any alterations.

Therefore, we should not fall into the misunderstanding that Tibetan Buddhism is something different from the Buddhism originally taught in India. Of course, in India there are many different schools of thought, in guise and in philosophy, within the Buddhist tradition. All of these were translated into Tibetan, in their totality, right from the *Swatantrika*, *Vaibhāshika*, *Chitmatra* and the *Madhyamika,* to the Buddhist Tantra, the *Shrāvakayâna*, the *Mahāyāna* and the *Tantrayāna*. The totality of Buddhism as prevailing from the 7th to the 11th centuries in India, went to Tibet, was established in Tibet, and is still kept intact. So, the saying that Tibetan Buddhism is some kind of Lamaism — which was very popular in the early 20th century and even when we came to India in 1959-60 — and also that it is very different from Indian Buddhism, is not true. There is no such 'ism' that can be called Lamaism. These kinds of words are very misleading.

The term 'consciousness' cannot be easily translated into any Indian language and sometimes this creates a big language barrier, making it difficult to have a proper dialogue, which is a difficult thing in itself. When Jiddu Krishnamurti was alive, we used to have so many dialogues, and once we had a dialogue on 'Dialogue'— what it is and how to have a dialogue. In the Indian Buddhist tradition, we have a concept that the *Madhyamikas* and the *Swatantrikas* cannot have a dialogue because they do not have any common ground on which they can share their thoughts. And, this is applicable, in general.

A lot of dialogues tend to become monologues. One talks about something from one's background and the other listens to it and

translates it according to his or her own background. In Krishnamurti's language, 'I talk from my own conditioning and you listen from yours and both of us are talking together, but each one's understanding may be completely different depending on one's own conditioning'.

'Consciousness', or *chitta* in Sanskrit, is that which has the potential of knowing and thinking. *Jnana*, *vidyā*, *mathya*, and *mana* are often used as synonyms, but in different philosophical traditions they have different connotations. In Buddhism, *mana*, *mathya*, *vidyā* and *chitta* can be said to be almost synonymous. They all refer to that which is not material or static, but continuously changing, which goes on unendingly without beginning or end. Someone becomes a person because of the *chitta santati,* the continuity of the mind, the continuity of the consciousness, or something which has the potential of knowing and analyzing. That is the real *chitta*, and because of it, a person cannot come to an end or just disappear.

This continuum remains even after the attainment of the Buddhahood. The Buddha nature remains forever, and the continuity is always there, going from one birth to another and from one body to another. *Chitta* has no matter, no tangible form or place to remain in. But, once it is born into a body, it accompanies the body until that body dies. Through that body, the mindset produces many different kinds of consciousness; then it becomes knowledge with specification or *vijnana*.

Our bodies have different organs, each for a particular function. With a healthy and well-developed eye organ, the inner consciousness can produce the eye consciousness, seeing the form and transmitting its image to the eye organ. Then the consciousness sees it and perceives it as it is, relating to that particular organ, without which that particular kind of consciousness cannot be brought forth. Likewise, different organs are needed for voice, taste, smell and touch.

Buddhist terminologies are being borrowed many times, and we are not able to get them back. *Manovijnana* is the technical term for inner consciousness; but today, this term is being used for

'psychology'. And *vijnana*, which refers to a particular consciousness, is now used for 'science'. In our Buddhist world, we always try to use the word 'science' for science, and *vijnana* refers to a particular consciousness. But of course, words can be employed anywhere. In Indian classical tradition, there is a big controversy over whether the word really carries the meaning materially. However, Buddhists always believe in *apahara*, so the word can be used anywhere.

As mentioned earlier, *manovijnana* continues all the time and produces different kinds of *vijnanas*, such as, eye consciousness, ear consciousness, smell consciousness and so on. It comes from the previous birth, takes a body and remains in it until the death of that body. When death comes, all the bodily organs are left behind and the mind, or *manovijnana,* no longer exists as that person. It does not own the body. Until then, the body is somehow being maintained and it does not decompose. But, as soon as the ownership of that body ceases, the body decays; it cannot survive. There is some relationship between them because of the *jnana*, the understanding, the knowing of the material body, which goes with that particular *jnana,* then it remains alive and they go together. So, that *manovijnana*, the organ, is also *manasika*, not a physical body. To put it in words, the *Abhidharma Kosha* says: "It needs an organ but that immediate, foregoing movement of the mind itself is the organ of the second movement of the mind." It is a bit complicated, but on that basis *manovijnana* continues to exist. The person does not directly perceive it or know it, but it is there.

It is almost impossible to give answer to the question: 'What is the experience of consciousness?'. If someone experiences one's own consciousness, then that person is at the verge of freedom or enlightenment. Enlightenment and bondage, or freedom and bondage, are divided by only one thing: not seeing oneself, not perceiving oneself directly is 'ignorance' or bondage; and seeing oneself is enlightenment. So you can ask only the Buddha, or someone enlightened, about the experience of consciousness.

I do not have any experience of consciousness, so whatever I am saying comes from *shrutimayaprajna*, or knowledge that is

borrowed through hearing or reading. That is the only possible way for an academician to talk about this subject. The Buddha, once enlightened at Bodhgaya, decided not to teach. He said, "I experience enlightenment as *amrita*, or nectar, very deeply, very peacefully, without any chattering or *prapancha* (diversity) or *asamskrita*, not composed by cause and conditions. But I have no words to express it, and nobody will understand it. Therefore, I remain in the woods, in the jungle, peacefully." Then Prajapati Brahma, Indra and many others came and asked the Buddha to teach and said to him: "If you cannot talk directly, there are so many ways. You can teach by *upamā* or using many examples or by negating that which is not consciousness, and so forth." Of course, then the Buddha agreed to teach and gave the *Dharmachakra Pravartana* at Sarnath, after seven weeks of enlightenment.

Thus, the experience of consciousness cannot be scientifically searched. We can talk about consciousness, but real consciousness is to be perceived by one without any duality. Why is one unable to perceive one's own consciousness, which exists all the time? That consciousness is working to perceive all material things and to conceive non-material things, yet it is neither able to perceive nor to conceive itself. The *Vijnanavadins* think that there is another mind which sees that mind. It is not accepted by the *Madhyamika* school, because this school does not accept a dual entrance, or *pravesha*, of the mind into an outer and inner object, simultaneously.

Whatever it may be, the Self, *Ātma*, Consciousness itself, is eluded and cannot be realized due to the ignorance of the Self. All Indian traditional philosophical thoughts [schools], except the *Charvakas*, agree on this point. Both the *Ātmavadins* and *Nirātmavadins* say that we are not able to see the *Ātma* as it is. To see the *Ātma* or to see the *Nirātma* are two different terms used by the *Ātmavadins* and *Nirātmavadins*, but they indicate one and the same thing. We, the Buddhists or *Nirātmavadins*, say that the Self, as construed at this moment, is *avidyā*, or ignorance; the Self does not exist in this manner; this is not seeing

the Self. As one does not see the Self as it is, as *Ātma*, which is eternal and a very profound thing, one perceives it in the conventional manner, believing that the self-nature exists inherently, by itself. But, according to the Buddhist viewpoint, this is the basic root of ignorance.

When we suppose that our stream of consciousness exists by its own nature inherently, we create a great delusion, which causes further attachment and hatred. Hatred and attachment, *rāga* and *dvesha*, are the products of ignorance, or *avidyā*. *Avidyā* does not let one see things as they are or to see oneself or others. It creates an impression that the self exists by its own nature, and that others exist by their own nature. When things exist by their own nature, the interdependent relationship is negated. Once the interdependent relationship is negated, we either hold on to something, that is, attachment, or *rāga*, or we dispel or dislike something, which is repulsion or *dvesha*. *Dvesha* and *rāga*, both are created by the basic ignorance of the Self. Defilements or *kleshas,* prevent one from seeing one's own consciousness with clarity, as it is. To see one's own stream of consciousness one must dispel the *āvaranas*, or hindrances, which cloud one's vision: the *klesha āvarana* and the *jneya āvarana*. The former is the mental defilement, and the latter is the subtle mental inability to see oneself.

In order to eradicate ignorance, we have to find its antidote. Perceiving things as independent, inherent, existing by their own nature, has to be negated. We have to realize the interdependent nature of things, which is one side of a coin. The other side is *shunyata*, or voidness, nothingness, emptiness or the unreality and illusiveness of our objective universe. When we realize *shunyata*, everything becomes possible, including seeing consciousness itself. Mahayana Buddhists talk about meditating on *shunyata* in order to eradicate ignorance and realize the Self as it is. The *Shravakayana* do not talk about *shunyata*, but about the impermanence or transitoriness, *anityata*, which is somewhat different from *niratma*, *anatma*, or selflessness. These are slightly different ways of defining voidness.

By meditating upon *shunyata*, defilements and their cause — ignorance can be eradicated, because the perception of *shunyata* is the antidote of ignorance. The dispelling of ignorance itself is the seeing of consciousness. There is no separate process for seeing consciousness. When a light is lit, darkness disappears. There are no karmic forces involved, it is spontaneous; it is the same. The dispelling of darkness and the coming of light or vice-versa is spontaneous. Likewise, the dispelling of ignorance and seeing the Self is not an experience, but a perception of the Self. The perception of the Self exists.

The Buddhist people, in different traditions, have many ways of meditating on emptiness or voidness. The usual process is to meditate upon the non-independent existence of Self, which we call *pudgal niratma*, or *shunyata* of the Self. Then, this process extends to material things, or *dharma nirâtma*, which means meditating on the non-independent existence of outer things. This is a longer process. One tradition, which we call *Zogchen*, derived from Nagarjuna and Asanga, deals with the introduction of the nature of the mind. This tradition is a shortcut, because one does not need to contemplate or analyze the existence of Nature or things by their intrinsic nature or interdependent origination, which takes a lot of time, but should meditate on the mind itself, the *manovijnana* itself. When we see the *manovijnana*, we see the *shunyata* of *manovijnana* and the *shunyata* of everything. Thus, we try to observe the mind as it arises, as it chatters, as it goes without any hindrance or control over it. One becomes an observer and continues to observe.

Jiddu Krishnamurti talked about observation. It was very similar to the method of *Zogchen*, to observe the process of that, which is capable of knowing and of creating other minds of knowing, and that needs to be observed. But, the difficulty is that the observer and the observed are the same, and we are not able to dispel the duality between the observer, the observing and the observed. We call it *trikut*, the three portions which are dismantled by observing. The elimination of the observer takes place through meditation. Then it clears, it experiences or sees the consciousness as it is.

In an academic discussion, words, language and expression carry a lot of importance. In meditativeness, all this goes away. The other day, when we were talking about the person, consciousness, the stream of consciousness and so forth, I heard different kinds of very powerful statements. One was, "I think, therefore I am", which is often quoted by philosophers. And, others said: "I am, therefore I think". Prof. A.K. Saran used to say: "I am, therefore I think." It is not correct to say "I think, therefore I am." Thinking is a manifestation or an action of consciousness. So, I disagree to both of these statements. I would rather say, "The mind is, therefore we all think." All sentient beings think because consciousness or the mind *is*. This is closer to the truth.

"I think, therefore I am" is something different. To say "I am" is rather arrogant. The reality is: "The mind is, therefore everyone has the capability of thinking." That stream or continuum of consciousness is individual. It has no beginning and no end. Therefore, as many sentient beings are existing, only so many will exist. No new sentient being can be created, no existing sentient being can come to an end. Sentient beings, or the continuum of mind, is always there.

Then, what is the Buddha nature? What is the enlightened mind? That question is very important, and everyone asks it. Consciousness is a particular one; it is an individual one. Each individual has a different kind of consciousness. All consciousnesses are not one and the same. Each one has a peculiarity, an individuality. Therefore, all unenlightened sentient beings, even their bodies, are never identical. On this earth, several billion human bodies exist, but you cannot find two identical faces. Even twin siblings are slightly different, if one watches carefully. That means, the stream of consciousness is also not the same. It has its peculiarity, its originality or speciality. And, that speciality is due to duality, due to not seeing consciousness.

When consciousness is perceived, it goes into the 'Thatness', the *dharmakaya* or the *dharma dhatu*. *Dharma dhatu* means the end. Therefore at the Buddha level, the individuality ends. It can be retraced or re-accounted, but at the Buddhahood, once

the Buddha nature is attained, each individual consciousness loses its individuality. It gets immersed into *Tathata*, or 'Thatness'. Then, there is no separation or individuality. In other words, as long as there is an individual consciousness, it is unenlightened, and as soon as the individuality is immersed into 'Thatness', it is enlightenment.

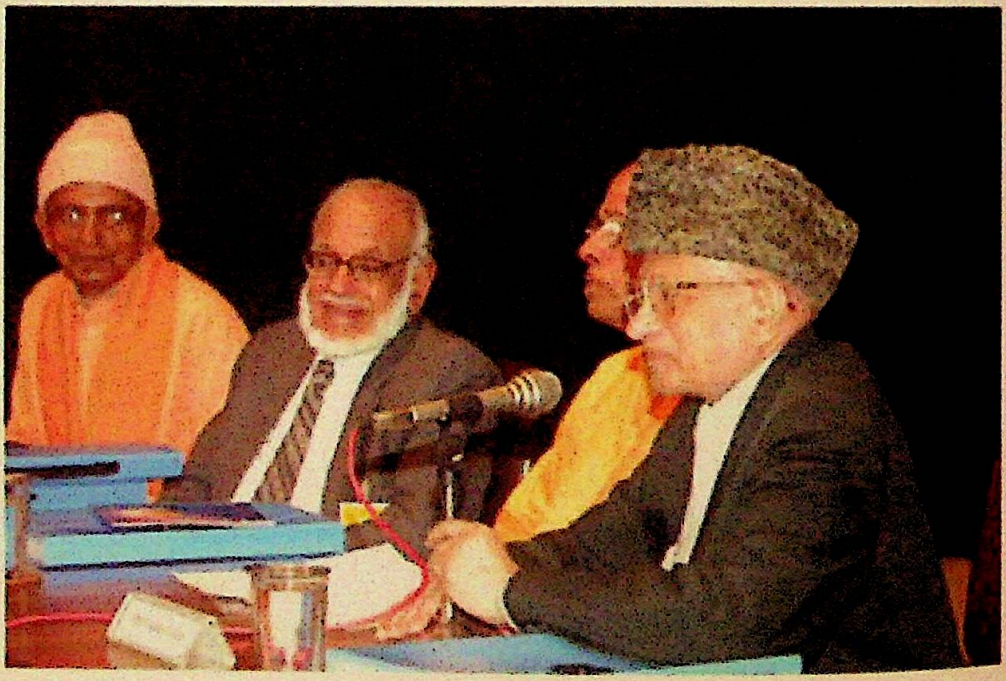
I am grateful for your patience and tolerance with my presentation, and once again, I apologise for not having had a prepared presentation. In a very primitive or rough way, I have tried to summarize the Indian Buddhist tradition, particularly, that of Asanga and Nagarjuna, the Mahayana tradition, which would not be complete without taking their entire teachings and those of their later followers into consideration. I have tried to summarize in a very crude way how we look at consciousness or *manovijnana*. Thank you very much.

INAUGURAL SESSION

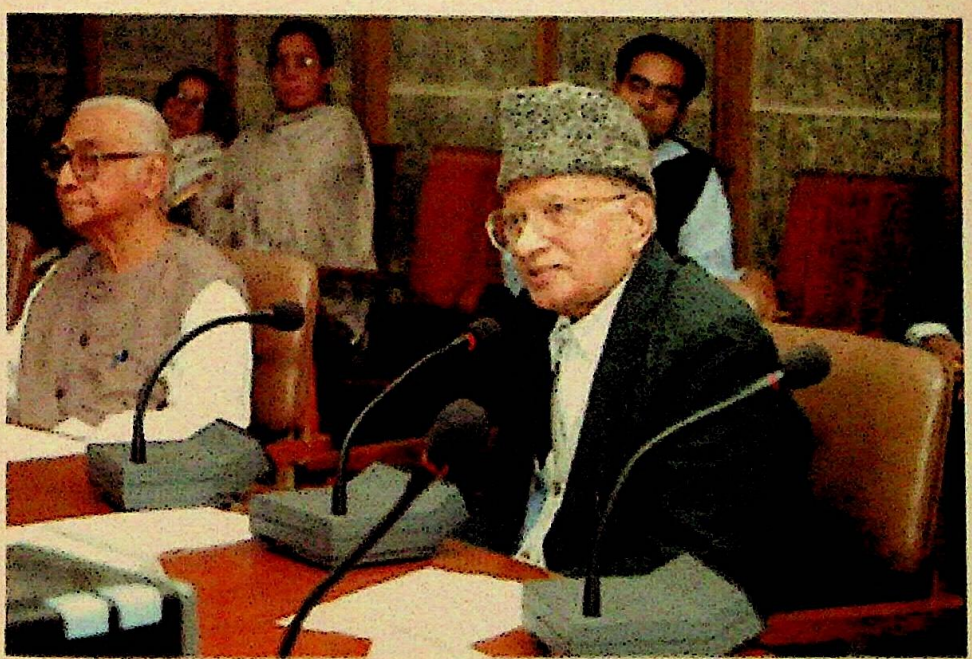
13 January 2006

Prologue Session at the Conference Hall of the Institute

Inaugural Session at the Vivekananda Hall of the Institute



Business session at the Conference Hall of the Institute



Valedictory Session at the Vivekananda Hall of the Institute

Welcome Address

SWAMI PRABHANANDA

Sa vidya ya vimuktaye
(That is true learning which makes man free from all fetters.)

Prof MGK Menon, Dr. Vikram Sarabhai Distinguished Professor of the Indian Space Research Organisation, India, Prof Kireet Joshi, Chairman, Indian Council of Philosophical Research, Srimat Swami Smarananda, General Secretary of the Ramakrishna Math and Ramakrishna Mission, Dr. Saroj Ghose, former Chairman, International Committee of Museums, respected monks and nuns, distinguished guests, ladies and gentlemen, I extend a hearty welcome to all of you.

A group of eminent philosophers and scientists from several countries met here on 8 and 9 January 2002 to talk and discuss on 'Philosophy and Science: An Explanatory Approach to Consciousness'. Thereafter, some of them as well as others participated in the next International Seminar from 16 to18 January 2004. The proceedings of both the Seminars have been published.

As a follow-up of these two International Seminars, some specialists in science, philosophy and religion have assembled here in an International Workshop-cum-Seminar, its theme being 'Consciousness: A Deeper Scientific Search'. It will continue from 13 to 15 January 2006. And, almost as a prologue to this, we had a special session with Prof Samdhong Rinpoche, Kalon Tripa, Chairman of the Cabinet, Central Tibetan Administration of His Holiness the Dalai Lama, on 8 January 2006.

Consciousness is still a mystery. It remains an unsolved riddle among the scholars.

Consciousness has three dimensions: (a) the ordinary consciousness (b) the damaged or deficient consciousness, and

(c) higher reaches of consciousness. There are two possible approaches for exploring consciousness: experimental and experiential. Besides the philosophers and scientists belonging to several disciplines, we have here practitioners of several religious traditions who will present their experiential observations; and also neuroscientists who will present their experimental data.

To understand the higher reaches of Consciousness, some remarkable experiments have been conducted in several places. By studying relationship between religious experience and brain function, particularly during the peak moments of meditation, with the help of SPECT (Single Photon Emission Confronted Tomography), some scientists have proved beyond doubt that mystical experience is biologically, observably and scientifically real. (Why God won't Go away — p.8) Mike Gazzaniga through his studies on split-brain patients has come forward with a biological explanation of morality (Reprinted in the Know-how section of the Telegraph dt. 28 November 2005). It has been suggested that the pineal gland houses the Consciousness-intelligence. Meditation qualitatively stimulates the pineal gland and produces melatonin which derives from an amino acid called triptophan. Melatonin when administered to patients produces an effect of relaxation, sleep and tranquility — these symptoms are common to a man when he meditates deeply. I have mentioned a few stray findings just to hint at the present trend among a group of researchers. In this way, scholars of various disciplines are contributing to the emergence of the science of Consciousness, being talked about.

To understand the nature of the higher reaches of Consciousness, we need to refer to the findings of the Indian *rishis* of olden days. They demonstrated that even beyond intuition one must explore till he seizes the Reality by direct immediate apprehension (*sakshat aparokshat*). The reality is the self-effulgent Consciousness. This finding deserves special attention.

As thing stands today, it is necessary that every discipline approaches the challenging subject in a spirit of humility, with

willingness to learn and eagerness to understand other's point of view.

We are grateful to respected academicians and spiritual practitioners who have taken the trouble to come over here and participate in this fascinating venture of deeper scientific search regarding the nature of Consciousness. Before I stop, I cordially welcome all of you, once again.

Inaugural Speech

M.G.K. Menon, FRS

Swami Smaranandaji, Swami Prabhanandaji, Prof. Kireet Joshi, distinguished members of the audience, participants in this International Workshop-cum-Seminar: warmest greetings to all of you.

I had participated in the Seminar organized by the Ramakrishna Mission Institute of Culture, in January 2004, on the subject: "Life, Mind and Consciousness". At that Seminar, it was agreed that it would be valuable to have a follow-up workshop, in which those who had experienced various levels of consciousness would recount their experiences. These individuals would be called 'experientialists'. I am certainly not one of those. In addition, at the same meeting, there would also be a group of 'experimenters', who are aware of a variety of new techniques that have emerged in recent times to study the human brain and its functioning; and they would consider whether it is possible to carry out any experiments on the experientialists when the latter have brought themselves to various stages of psychic experience, namely levels of meditation and consciousness. This would have to be done without, in any way, affecting the experientialists and thereby interfering with the very situation which one is attempting to study. I am sorry to say that I am not also one of the experimenters with expertise in these newly emerging technologies to study various aspects of the functioning of the brain.

As just stated, this Workshop-cum-Seminar is the result of the meeting organized two years ago. It is certainly important to bring together, at the same meeting, these two widely different groups of experientialists and experimenters. Perhaps, this can be done

more easily in India than elsewhere, because of a spiritual tradition that is still ongoing, and is particularly evident in the Buddhist, Hindu and Jain philosophies; as a result of this tradition many go through rigorous training that leads them to becoming experientialists. In several of our religious practices and systems of *Yoga*, it is known that several activities that are purely involuntary, as far as the majority of human beings are concerned, can be made voluntary by special training. There are large numbers who practise such voluntary controls relating to physiology and metabolism, as also relating to the brain through meditation. It is, therefore, feasible to further this interactive study between the two groups.

But, whether this can be successful, at the very deep levels of meditation and awakening of the inner consciousness that many of us are interested in understanding, is not clear. Firstly, those who have undergone such deep experiences are not easily found out. Even if identified, they are not the type who would come for such meetings and allow themselves to be subjected to experiments. Even if that became possible, namely to get such an individual, who would agree to experimentation, it is not clear if one would not interfere with the experience itself. However, in the interests of understanding this area, one must pursue this approach to the maximum extent possible – to see how far we can get.

In spite of my inadequacy on the two aspects that particularly relate to this meeting, I stand before you at the insistence of Swamiji Maharaj Prabhanandaji, who would not take "No" for an answer. I have very inadequate knowledge concerning experientialists and their experiences. But, on the subject of experimenters, I am aware of the work going on in this country, even though I am not directly involved in it. We had with us last year, Prof. P.N. Tandon, a very distinguished neurosurgeon and deep thinker in this field. He would certainly have been able to contribute far more than me.

Prof. Tandon had worked with great neurosurgeons like Prof. Kristiansen and Prof. Penfield. He is aware of the range of fields that contribute to present day research on the human brain – and there are a myriad of these. He is familiar with this not only at the

national level but also at the global level. As the President of the National Brain Research Centre, Manesar, Haryana, he has responsibility to gather together these threads from different fields to bring about a coherent programme of research, and ensure the viability of the different institutions and disciplines that can contribute. He has written a booklet on "Consciousness: Clinical and Beyond" (published by the Indian Institute of Advanced Studies, Shimla) in 2001. It is a remarkable booklet from which I have learnt a great deal. In spite of its slim size, it contains a lot of ideas and information.

We also had last year, Prof. George Sudarshan, a distinguished physicist who is not only one of the great figures in the world in the field of theoretical physics and foundations of science, but also one who is deeply knowledgeable on aspects of Indian spiritualism. Unfortunately, he has not also been able to come.

I have mentioned this because he would surely have enlightened us on the great debate in theoretical physics, a century ago, on 'the wave-particle duality': how light, which had been regarded as waves that undergo interference and diffraction, and other such wave-like phenomena, can be regarded and behave as particles called photons, that were postulated by Einstein in that miraculous year of 1905. Because of the wave-particle duality, electrons, regarded as particles, can pass through two nearby slits simultaneously because of their probabilistic wave nature. Further, on how we have a range of physical constants that seem to have precise values fitting into a framework that is conducive to the functioning of life as we know on earth; and the related question as to whether there are changes in these constants or are they unchanging for ever. Then, there are issues coming up such that, if you believe that your will is not determined by external causes but is ultimately something that you come up with yourself, as largely believed, then you have to ascribe that same notion of free will to a single particle. There are many, many such questions. Why do I refer to all of this in a workshop on consciousness? Only to illustrate that an edifice of understanding that had been built up through

scientific work was found to be inadequate to understand phenomena at another dimensional level, e.g., of smallness; new ideas and concepts were called for. Nature is multilevel and multidimensional; and each of these levels or dimensions presents a different picture. One is attempting to unify these through a 'theory of everything' – a grand unification. But, how far can one go is the issue. Are there fundamental reasons why one cannot proceed beyond a certain stage? We have in our midst one of the distinguished students of Prof. Sudarshan, namely, Prof. N. Mukunda, who I am sure will enlighten us on some of the deeper aspects of these questions.

In the previous Seminar organized here in January 2004, I had dealt with the issue of the 'Origin and Evolution of Life'. In particular, I had argued that the present evidence, based on sound scientific facts, is that life in all its ramifications that we see on earth, is a natural process. It has come about through chemical processes, self organization and evolution. The latter is a process that takes place through genetic changes; these are essentially chance events arising from accidental mutation. Thereafter, there is a test of the success of the products of these changes in real life, namely, their ability to survive. In that paper, I did not go into issues relating to conditions that are necessary for life to evolve. Obviously, there cannot be life as we know it, on the Sun or the stars or on many planets where the environment, far from being supportive, would be hostile to it. In contrast, conditions on earth have been conducive. Further, the laws of nature, and various parameters relating to these, have all been such as to make possible the life process as we see it. This may point to the fact that there is something special about us, as human beings. The existence of life and its evolution which are explicable in terms of the processes just referred to, based on the laws of physics and chemistry, cannot rule out the question of intelligent design in the larger context.

Many distinguished physicists have remarked on the laws of nature and the fundamental constants, all of which appear to be precisely those that would lead to life. One could, of course, take

the opposite view that this is how nature behaves, and so, at a particular location where conditions were conducive, life evolved.

Let us now consider the field of consciousness. First, there is lack of a uniformly accepted definition. In a simplistic way, starting with the fact that 'consciousness' is a noun of the adjective 'conscious', one can say that it means being awake and aware of one's surroundings. One can ask: aware of what – of something superficial or of something obvious or of something deeper?

There are many activities that a normal human being is aware of in a conscious state: of being awake and asleep, of joy and suffering, of inputs through the basic senses of smell, taste, hearing, seeing, feeling and so on. It may correctly be said that one would not be aware of any of these things without being conscious. Thus, a physician would normally look at two states of a person, of being conscious, or unconscious; there are intermediate states. Again, when one thinks of memory, one is aware of different levels at which information is stored – of facts, figures, names, faces and the like that are required for routine purposes; these are stored in the hippocampus in the brain. In contrast, there are powerful and persistent memories, often of an emotional nature, that are stored in the amygdala. There are also short term and long term memories, and one sees variations in these with age and with disease. There are many aspects that we refer to as being in the subconscious, and play a role in many aspects of daily functioning; these could be memories, emotions and the like. This entire range of issues comes under the umbrella term 'consciousness', and correctly so. It probably represents different levels in the same space; but in terms of brain function, their localization and functioning could be different.

There are many other issues that pose important questions in the area of consciousness. In one direction, we have issues that relate to the brain and the mind: Is consciousness something wholly in the human brain? If so, does it have a specific location in the brain? Will an understanding of the functioning of the brain enable one to understand 'consciousness' in its entirety? Or, is there

something beyond this which is functioning and may be measurable? Are consciousness and the mind synonymous? If so, what is the mind? Is the brain the specific organ that relates to the mind?

On these aspects, I can do no better than to quote Penfield, one of the great neuroscientists and philosophers, a pupil of Sherrington, who said in 1975:

"Throughout my scientific career, I, like other scientists, have struggled to prove that the brain accounts for the mind. But now, perhaps, the time has come when we may profitably consider the evidence as it stands, and ask the question: Do brain mechanisms account for the mind?" He concludes: "Because it seems to me certain that it will always be quite impossible to explain the mind on the basis of neuronal action within the brain, and because it seems to me that the mind develops and matures independently throughout an individual's life as though it were a continuing element... I am forced to choose the proposition that our being is to be explained on the basis of two fundamental elements." Many distinguished theoretical physicists have held that the mind, as distinct from the brain, is the primary reality.

It is sufficient to state that the brain is a physical object, which has been studied in great detail; many would regard our true understanding of it as still being in its infancy. It is a highly complex object where chemical and biological processes take place. It receives, through the various senses, a great many elements, (impressions, experiences, etc.) external to it; these are analyzed, stored, computed upon and made use of. Being a physical object, efforts can be made to try to understand the functioning of the brain in terms of various scientific laws. Even, this is hugely difficult when one looks at the complexity of brain structure, with over a hundred billion neurons and their intricate bioelectric interactions through several trillion synapses. There is further the mediation of an incredibly large number of chemical signals. There are a huge number of neuropeptides involved in modulating and fine-tuning neural activities in different parts of the brain. There is the

continuously advancing frontier of non-invasive techniques that are in use to study brain function, and localization of many phenomena, such as, emotions. One has been able to describe several mental diseases in terms of defects relating to one or more genes. One is truly amazed at the extent to which our studies have already taken us, when one sees the complexity of brain structure and function in terms of neuro-anatomy, neurophysiology, neuro-pharmacology, and what the probings aided by modern tools of biophysics, biochemistry, molecular and cellular biology have yielded. All of this falls within the realms of scientific method, and can be used to understand physical elements relating to brain function.

A different class of questions relating to consciousness would be: Is consciousness something specific to human beings? What about consciousness in the case of the animal and plant kingdoms? And indeed, does the non-living part of nature have consciousness? Is there consciousness, of the type many discuss, present in a person who is unconscious? Is there a level of consciousness one can reach, which relates to the universal consciousness, which connects everyone and everything?

All of this is just to point out that consciousness is a very complex phenomenon. There is a fair amount of coverage of several of these issues in Tandon (2001).

Let us consider certain other aspects that may have some relevance to our present discussions. Consider the manner in which modern science has advanced. The march of science in the 18th, 19th and 20th centuries has indeed been truly impressive. This has come about through great reliance on the observational method, and in particular, on doing experiments. The results of the experiments have to be reproducible; in that, they should yield the same results wherever they are done and by whomsoever. The effort thereafter was to systematize the results of measurements. From this one can proceed to generalization, and to theories, which should be capable of making predictions concerning matters yet unknown. The theories have to be self-consistent. They are often developed on the basis of intuitive ideas that are then worked out

mathematically. Ultimately, the test of the theory lies in the correctness of the predictions that it leads to.

Our present edifice of knowledge has been built up on the basis of an analysis of simple situations. The generalization possible from such an analysis is spectacular; as also that these ideas can be applied to areas that are totally out of reach of experimentation. Thus, through pure observation and deduction, one has been able to understand so much about the Universe (overall dimensions as also of objects, velocities, conditions prevailing, energy processes, composition and the like). In a different direction, from this base of knowledge, one has been able to work out technologies that have totally transformed the functioning of society. These successes have led to the great confidence among scientists, and in society, on the correctness of the scientific method.

There is an appreciation that there is a great deal yet unknown. But in principle, it would be possible to discover these, and finally to understand what was discovered. It led to a philosophy of absolutism and determinism, in particular that everything could be understood on the basis of science. It was because of this confidence that Laplace could say that if he knew the position and velocity of every particle in the Universe, he could predict the entire future, provided he had enough knowledge to carry out the necessary calculations. Such was the edifice built around the concepts of Descartes, Laplace, Newton, Copernicus, Galileo, and others in the 19th century. And now, in the life sciences, there is a similar sense of absolutism, that everything can be understood concerning a living system from the genes that compose it.

Major changes in thinking relating to science have occurred in the 20th century, some of these being of a conceptual nature. But the sense of absolutism has persisted to a great extent among a large number of scientists and in society.

The conceptual changes of the 20th century are those that underpin quantum mechanics, e.g., wave-particle duality, the uncertainty principle, complementarity, etc., as also on how to deal with situations normally encountered in the world that are

complex and far from equilibrium. We now deal with irreversible phenomena, bifurcation, dissipative structures, non-equilibrium thermodynamics, self-organization, chaos and complexity theory. We are, in a sense, moving away from simple reductionist approaches to situations where we would have to look at the complex interplay of interactions that govern large scale systems. Indeed, if Lapace was alive today, he would be among the first to realize that it would be impossible to have all of the information to make the precise predictions even in the case of a single particle or object, far less the Universe.

Kothari, in the Shri Raj Krishan Jain Memorial Lecture, Delhi University in 1977, had remarked: "It is most important to make an unequivocal distinction, even if it cannot be sharply made, between rational, beyond-rational (beyond-reason), and anti-rational (anti-reason). Anti-rational or anti-science has no place in the affairs of man. It is untruth. But, beyond-reason is not anti-reason. And, beyond physics is not anti-physics. It is not a negation of physics..." Kothari re-emphasized this in his Meghnad Saha Medal Lecture, 1978, of the Indian National Science Academy, when he said: "To say 'beyond-physics', is not to imply anti-physics, or contradiction of physics. Not at all. Antiphysics, or antiscience, should be ruthlessly denied any place whatsoever in human thought and affairs. One must remember the distinction clear in principle, even if in practice it be difficult to apply, between anti-physics, physics, and beyond-physics." Kothari has, in this paper, quoted many outstanding scientists on the issue of whether there are questions that lie beyond the realm of science.

This is in line with the work and logic of Kurt Godel that the scientific approach is based on defining a certain set of postulates; then to apply normal mathematical logic to deduce things from those postulates and to establish relationship between theory and experiment. But, Godel proved that one can never be sure that postulates are self-consistent – indeed, whatever conclusions we draw, are limited by the postulates that we start with. At the last seminar in January 2004, there was a paper presented by J.K. Ghosh on Godel's Theorem.

It is these issues that will come up when we would be doing experiments with the experientialists, for the question will arise whether their experiences and the state of mind or of consciousness lie within the domain of science or beyond it.

In the case of the human brain, the question that has been asked is whether one can understand all aspects of its functioning in terms of detailed elementary processes that would follow in a deterministic fashion from the laws of physics and chemistry; and this would include aspects relating to its genetic make-up. Certainly, when there is any dominant feature, such as, genes that would predominantly relate to mono or polygenetic diseases, they would dominate, and be responsible for what we see. On the other hand, the overall functioning of the brain, as characteristic of a majority of human beings, would involve the complex interplay of many factors including genetic and cultural, apart from experiential.

One can take the view that higher aspects relating to the mind, including higher levels of consciousness, cannot be subjected to scientific study in the way we have carried out such studies. Proponents of this view would suggest that the only way to understand this area is to practise a system of meditation that will lead to self-experience. On the other hand, if such experiences are to be scientifically investigated to the extent possible, then one must use the scientific method that has stood the test of time.

It is increasingly realized that these studies would have to be carried out on a holistic basis, which would cover many aspects to probe the totality of the human personality, including experiences. These are within the classical domains of studies in psychology and psychiatry. This would essentially recognize that the brain as a physical object has its structure and functioning based significantly on the genetic composition; but in addition, it has received external inputs, and also has internal programming based on training, which are intrinsic to its functioning. The sum total is what affects the mind.

I have an elder sister who is a distinguished psychiatrist. For many years, she ran one of the very large mental hospitals. Thereafter, she has set up a foundation for schizophrenic disease.

Her approach to the problem of mental disease has been that whilst one should conduct the maximum amount of analysis possible through modern scientific methods on a patient, including non-invasive techniques, followed by recourse to medication, the key to recovery depends critically on integrated social and cultural support. This is because there is a great deal relating to the human brain which has developed on the basis of a variety of personal experiences in relation to the family and society. There are vast cultural inputs which constitute an important background. It would be difficult to think of the human being purely in terms of an atomic, chemical or biological make-up of brain structures; one has to realize that it is the interplay of a variety of factors which makes it a living spiritual entity. This integrated make-up, as also faith, beliefs and the like underpin the newly emerging areas of psychosomatic medicine.

In this connection, the great Italian thinker and writer Dante Alighieri had remarked: "Faith is the foundation of what you hope and the firm belief of what you can't see; and I think, that's its essence".

Through the use of modern imaging techniques, it is possible to localize, in the brain, areas which appear to be specifically related to various emotions and experiences. However, as yet it has not been possible to locate the neuro-anatomical substrates of various higher psychic experiences. There is a recent monograph on 'Zen and the Brain', by the clinical neurologist James Austin (MIT Press, 1999) who has categorized various stages of meditative depths. Apparently, in the Zen tradition, there is a meditational staging, which involves various levels. In the earlier stages of psychic experiences, one starts with transient feelings of calm, peace, joy and so on. As one moves upwards it goes through enchantment and ecstasy till finally, at the highest levels, one's self awareness progressively declines and disappears, with a sense of detachment from cravings and aversions. This leads to an awakened consciousness characterized by selfless love and compassion. (Kochupillai, 2001) Efforts have been made to apply non-invasive techniques to, at least, classify these levels.

We have at this meeting many distinguished philosophers who have studied the ancient texts, particularly of Buddhism, Hinduism and Jainism. I have no particular expertise to deal with the topics that they will elaborate on. It is a matter of great amazement to me that, as long ago as many centuries before Christ, there were people who had asked these questions; who had worked out many esoteric practices that turned out to be a comprehensive set of psycho-physical practices, that integrate the body, including the brain and the mind. From what it would superficially appear to be a set of breathing exercises that would oxygenate the body, one moves on to the concept of *pranayama*, which is not a simple phrase to translate. It is a practice that is embedded in a philosophy, involved in holism and harmony. These practices then set in motion a series of energizing currents in the body. These aspects will be certainly expounded by the experientialists and philosophers.

I have given references to a few articles that I have perused, and from which some of the material in this talk has been taken. I found them greatly illuminating. Since, this is meant to be an inaugural talk, I have covered a large number of topics, more in the nature of highlighting some issues and posing questions, rather than answering any. In this session, there will be a formal keynote address by Prof. Kireet Joshi which will be more authoritative and scholarly.

I have great pleasure in inaugurating what appears to be a very interesting meeting.

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Address by the Chief Guest

SWAMI SMARANANANDA

Introduction

Swami Prabhananda has persuaded me to attend and participate in this august gathering of scholars, though I am neither a scientist, nor a scholar. In the ten minutes allotted to me, I place before you my stray thoughts on this subject.

Preamble

'Consciousness' is a topic that is attracting more and more attention among thinkers today. The subject for this seminar is 'Consciousness: A Deeper Scientific Search'. Some questions arise spontaneously in our mind:

1. Who is to do this 'search' and what kind of search he or she is going to do?
2. What is to search, and where to search?
3. What do the words 'deeper' and 'scientific' signify?

Discussion

Modern science is empirical and experiential. It cannot go deeper than what the five sense organs (*jnanendriyas*) can perceive. After identifying and classifying the data available through the senses, modern science is trying to define consciousness as a product of the physical body.

Now, if a 'deeper' search is to be made, will that 'search' transcend the senses? How can we know that something called 'consciousness' exists? And if so, what is its function? If all the knowledge or rather information gathered in our mind is only a transformation of consciousness, where are we going to 'search' for it? Attempts to find it in the grey matter in our head, seems rather futile.

Our ancient *rishis* tried to search for the basic material at the back of this phenomenal world, but unable to come to a conclusion,

they turned their senses inward. '*Kaschit dheerah pratyagatmanam eikshat, avritta cakshur amritatvamicchan*' (*Katha Upanishad*, IV.1). This search led them to the all-pervading intelligence, a contentless Consciousness (*Shuddha Chaitanya*), which is pure, unalloyed, eternal, unborn, which has no beginning or end and which is all-pervading. When it is to be perceived or rather experienced, there is no subject experiencing it, nor it is an object, as there is no subject.

Then, where are we to search 'deeper' for experiencing it? Who is the one searching for it? The *Katha Upanishad* says (VI.9): '*Na sandrise tisthati rupamasya, na cakshusha pasyati kaschanainam*'. His form is not within the field of vision. None can see Him with the eyes. He is revealed by the intuition of the intellect, which resides in the heart and controls the mind.

The *Katha Upanishad* says further (VI.12): '*Naiva vaca, na manasa praptum sakyo na cakshusah. Astiti bruvatonyatra katham tat upalabhyate*'.

Even when all search fails, we have to acknowledge that something exists as the fundamental substance, on which or in which the whole edifice of this universe exists. That is why the Upanishad says: Except from those who say that It exists, how can It be 'realized'?

Yajnavalkya, the great sage of *Shukla Yajurveda*, shows that all things are revealed by the light of the Self (*Ātma Chaitanya*). In his commentary, Sri Shankara explains as follows: "The intellect, being transparent and next to the Self, easily catches the reflection of the intelligence of the Self. Therefore, even wise men happen to identify themselves with it first; next comes the *manas*, which catches the reflection of the Self through the intellect; then the organs through contact with the *manas*; and lastly the body, through the organs. Thus, the Self successively illumines, with its own intelligence, the entire aggregate of body and organs." (*Brihadaranyaka Upanishad* IV.3.7)

The *Taittiriya Upanishad* describes *Brahman* as *Satyam, Jnanam, Anantam* — That which is Reality (*Satyam*) is *Jnanam*

or Intelligence or Consciousness and that is Infinite. So, unsullied Consciousness is pure Intelligence, which cannot be an object of our mind, which itself is able to function because of borrowed Consciousness. Bereft of this Consciousness, our mind and intellect are only matter.

Conclusion

From the foregoing, we may conclude that insentient objects, such as, the body, the senses and even the mind appear to be conscious beings, due to their association with Consciousness or *Shuddha Chaitanya*. Like the moon shining with borrowed light, all aspects of this body-mind complex, the *buddhi* (intellect) down to the body — are illumined by the light of Consciousness.

Turning back to the questions raised in the beginning of this paper, we may see that the mind with its innumerable *vrittis* or modifications disappears into Universal Consciousness. That is what is called 'realization'. The example given by Sri Ramakrishna of the salt doll, who goes to measure the depth of the ocean, but never returns to reveal its findings, aptly illustrates it.

The question, whether the changes in the brain are effects of our thoughts or they are the causes of changes in our mind (*vrittis*), will remain unanswered as long as our search confines itself to the empirical level. Unless we agree to it that 'scientific search' should include the science of the Spirit, the innermost core of our being, it will always give an incomplete picture of Reality. Deeper search can only indicate that we will have to plumb the deeper levels of our consciousness. Here comes the relevance of *Yogic* methods of meditation, etc. which are attracting more and more people both in the West and the East.

May this Conference of scholars throw open the portals of Consciousness in its unsullied, pure form for all!

Thank you all!

Chairman's Address

KIREET JOSHI

Swami Smaranandaji Maharaj, Swami Prabhanandaji Maharaj, Professor Menon, Prof. Ghosh, distinguished scientists, philosophers, *yogins* and friends,

To listen to Professor Menon is to summarize for oneself the Encyclopedia. So, I have felt as if I was listening like a baby to a giant exposition, a panoramic view of the entire gamut of consciousness, starting from neuroscience to *yoga* and presentation of precise points of issues on which we have to dwell. I think, at the very first stroke the seminar has been successful.

Because of the limitation of time, I will say briefly a few things. I will set aside my written speech. The most important thing today is that, science, which was engrossed in matter, has begun to enter into the field of consciousness which was largely left to psychologists, psychiatrists, and in our Indian tradition, to *yoga*. I think, we are drawing to a kind of a close embrace between science and mysticism, so that science itself becomes transfused with mysticism and mysticism itself becomes transfused with science. The conflict which has been for a long time between science and spirituality comes to a kind of a synthesis.

Sometimes it is said that science has nothing to do with explanation, science only describes the phenomena as are seen. Explanation is left to philosophy, which explains or attempts to explain and yet philosophers, like Wittgenstien, maintain that philosophy is only descriptive. It only describes, it does not explain. It is for science to explain.

In any case, whether science explains or philosophy explains, human mind wants to explain. This is a fact. So far, it seems, what is to be explained has not yet been explained. On the side

of science, at one time it was satisfied, stating physical phenomena, but with the emergence of consciousness, there is the need to explain it. The entire neuro-science is concerned with how brain, which is physical, gives rise to consciousness.

On the side of consciousness, there are affirmations of experiences of consciousness of the highest level. It is stated that in the highest state of consciousness, the world disappears, matter seems to be ephimeral. But, now as we see more and more, particularly through the theory of evolution, and when we see design in the world, do we feel that this world is simply ephimeral, having no meaning, no significance? This is where today spirituality is obliged to explain the material or physical universe. Although many people believe that now science and spirituality are synthesized, I beg to differ. We have not as yet, neither from the side of science, been able to come to that which spirituality claims, nor from spirituality have we come to explain what the matter is. Synthesis, if at all is there, is still in the making and it is for that reason that this particular seminar is so significant.

There are scientists who right now seem to be philosophers. For example, Professor Menon refers to Penrose. In his 'Shadows of the Mind' he searched for the missing signs of consciousness. If you read the book, you will find if it is scientific or is philosophical. He speaks of computational approach in science uptil now and maintains, there is element in matter itself, which is not computational. He suspects that there is something in matter, which is not computational. David Bohm, for example, in his 'Wholeness and Implicate Order', raises this question very pointedly. He refers to Descartes who made a distinction between mind and matter, saying that matter is a matter of extension, and thought has no extension in it. Yet, how are they two related? He comes to the conclusion that there is, behind matter and mind, an implicate order and matter and mind are manifestations of an implicit implicate order. It is neither science nor philosophy . It is a new way of understanding the world.

I think, one of the most important things that Prof. Menon advocated was that if consciousness is to be studied properly, it should no more be anecdotal, it should be truly scientific. I am happy to feel personally that Indian tradition of *yoga* (I do not speak of Indian Religion), Swami Vivekananda called *yoga*, to be science par excellence: The reason is that this *yoga* has not been in India anecdotal. We do not look upon the *Veda* for example, which I regard to be the first record of *yoga*, a systematic exposition. The way in which Vyasa codified the entire *Samhitas*, is a scientific process by which he described experiences from state to state — '*agnimide purohitam yajnasya devamatvijam/ hotaram ratnadhatamam*'. It is the very first starting point of *yogic* experience.

When you come across, for example, some of the dialogues of Indra and Agastya, '*na nyunam asti nosvahah kastatvedo yadadbhutam*' – it is a question mark. Neither it is today nor it is tomorrow. It is an experience of the Supreme Reality, '*kastatvedo yadadbhutam*', who knows It that which is wonderful. Wonderful, why? Professor Menon referred to the concept of *sat-chit-ananda*. It is a very peculiar concept. It is not only *sat*, It is not only *chit*, It is not only *ananda*. It is a complex concept, simple-complex, we might say. This is what in the second sentence Indra says, '*anyasachittam abhisamchareyam*'.

It is manifested through '*anagha*' consciousness. It is Itself. Its self being '*anagha*,' and '*anagha*' means power of manifestation. *Utarhritam vinasyati* — intellect cannot grasp It. The moment intellect applies itself to grasp It, It vanishes. Such is the mystery and miracle of the Supreme Reality. It is a record of *Yoga – yaye viswa sapatyani tattvah*. It is one of the climactic point of *yoga* in the *Vedas*. *Yaye viswa sapatyani tattvah*, those who have arrived at the maturity and who have settled, *tattva* in the highest state of consciousness, *kramanaso amritattva agatam* – they have made the path. It is not merely a sporadic movement of those who have made the path '*gatum*' for immortality *amritattva*. Immortality of what? *Mahana mahatbhi*

hi prithivitaste. This is not merely an airy-fairy thing, *prithivitaste* — that which is on the physical, established on the physical. That is the claim of the *yogic* experiences of the *Vedas*. *Putraihi mata aditihi dyaseve* — it is at that time of the highest consciousness. *Aditi* is the name of highest consciousness in the *Vedas*, which is the generator of all the gods; all the cosmic powers are manifested from the highest consciousness.

If we study the *Vedas*, the *Upanishads*, the *Taittiriya Upanisad*, for example, gives a complete statement of '*anandavalli*', all the states of *ananda*. This tradition is constantly developing in India. We have Sri Chaitanya's experiences, Sri Ramakrishna's experiences recorded by M., even Swami Vivekananda's,—all the books on *yoga* are records of *yoga*. We come to Sri Aurobindo. Such a scientific process of *yoga* that he has laid down. There are two volumes of his own writings called 'Record of *Yoga*'. Day after day, whatever experiences he gained from 1910 to 1927 — seventeen years' record of experiences are there. Then, there are 'Letters on *Yoga*'— from 1926 to 1950. Again, from 1951 to 1973, thirteen volumes of Mother's *yoga*. It is a tremendous vista of experiences gathered right upto the point where Mother speaks of the mind or the self, discovered by the *yogic* processes and the application of the supra-mental consciousness into the cellular consciousness. So, on the basis of that experience, it can be said that if there has to be a further evolution, it has to be by the working of the supramental consciousness on the cellular consciousness. This is, according to me, a great gift that India can give to the world, so that science which is so-called fixed in matter and *yoga* which is so-called fixed in spirit, can be all synthesized together.

Vote of Thanks

Saroj Ghose

Revered Swami Smarananandaji, Swami Prabhanandaji and the monks of the Ramakrishna Order, respected Professor MGK Menon and Professor Kireet Joshi, distinguished participants and ladies and gentleman in the audience:

Swami Prabhanandaji mentioned that we are going to start from today another very exciting deliberation to unravel the mystery of mind. In his words, it is really a realm that is still unsolved. We find that the ancient Indian philosophers established a link between five *tanmatras*, (*shabda*, *sparsha*, *rupa*, *rasa* and *gandha*) with five basic elements (*kshiti*, *ap*, *teja*, *marut*, *vyoma* or *akasha* in the reverse order) and established a link between perception and the material world. At a much later date, in recent times, the physiologists identified parts of the brain responsible for different perceptions. They try to explain functions of the brain, the central nervous system, the motor action, the mode of our response to different perceptions and link them to the material world. But still, it remains a mystery—how our mind really works.

Prof. MGK Menon, in his very illuminating inaugural address has mentioned about the technological advances in studying the interior functioning of the brain. He refers to not only bio-chemistry or molecular biology, or that sort of subjects, he mentioned about bio-informatics and the associated complicated computational systems, the role of physics and mathematics into the study, about artificial intelligence in the robot of tomorrow. Many scientists believe in this way that if not today, one day at least consciousness could be explained scientifically.

But simultaneously, there are other experts who believe, as Swami Prabhanandaji mentioned, in the higher level of

consciousness. They believe that there is still something deeper which probably can never be linked up with the material world. I remember, the other day Professor Rinpoche mentioned this aspect and expressed his conviction that science, as it stands today probably will not be able to explain fully the function of mind as a body function, because consciousness is something beyond this material world. What Professor Rinpoche said is quite interesting, that consciousness can be transferred from one body to the other, from one birth to another birth.

Now, Professor Kireet Joshi very specifically stressed on the need of synthesis of these two sides, synthesis between spirituality and the material science. On behalf of the audience, I would like to thank Professor MGK Menon for his very illuminating inaugural address which has set the spirit for three days' deliberations which are coming up. I would like to thank Professor Kireet Joshi for his approach to synthesis which definitely would come up, again and again, during the deliberations. I would like to thank Swami Smarananandaji for his deeper understanding of consciousness, and Swami Prabhanandaji for a very good introductory speech. And, thanks to the participants, in advance, for very hard work for the next three days and thanks to the audience. Thank you all.

FIRST ACADEMIC SESSION

13 January 2006

The Internal Instruments of the Witness-Consciousness

SWAMI VIDYADHISHANANDA GIRI

Prologue

In the first part of this paper, I attempt to clarify contrasting notions about consciousness, drawing on my own experience, various streams of Indian philosophy (1) and references from the Veda. In the second part of this paper, I present to the reader some very secret knowledge of the Himalayan yogis and mystics who are adept in advanced meditation or yogic methods. Their models of the internal instruments of knowing are by no means anecdotal. They are fully reproducible and verifiable. Similar pictures to the figures I show of the astral and causal bodies have been seen in the inner eye of yogis and mystics through the ages when in deep meditation. One can also find these models coded in the Vedic scriptures, published in esoteric books by yogis and illustrated in ancient Vedic art. Perhaps some of the details differ, but the models are basically the same. Therefore, what I present here can be validated and is reproducible.

Just because the experience relating to consciousness takes place in the inner laboratory of the human being does not make the experience any less valid than the results of experiments that take place in a scientific laboratory. Taking our own experiences as valid data is very important in the study of consciousness (2). However, to reach a level of advanced introspection through meditation takes training and guidance, and is perhaps not so easily attainable. It is also difficult to observe experiences relating to consciousness and to design experimental protocols. And, that is why our depth of scientific understanding about consciousness is still relatively nascent. Well-defined scientific experiments that indicate the presence of an all-permeating consciousness as the

constant substratum have been reported (3). Then, others have tried to replicate the experiments (4). These results highlight the nonlocality principle of consciousness that is so profoundly described to be inherent in the transcendental *Brahman* of the Sanskrit scriptures.

Many scientific models also reflect the limitations of the existing cultural paradigms, and more often than not, matter is considered to be the causal effect as in the hypothesis that the brain is the cause of consciousness. Indeed, one of the great fallacies of modern science is to categorize consciousness as a state of mind or as an outcome of brain activity. Some modern physicists do, in fact, recognize that consciousness is the causal principle missing in scientific protocols (5). In age-old philosophical traditions, sleep is considered to be a conscious state, otherwise how can a person sleeping wake up upon the slightest of disturbances effected arbitrarily in time? Contrarily, in the neurobiological models, sleep is identified as lack of consciousness.

***Prāna*: The Missing Link**

Birth and breath are conjoined to mark the beginning of the life of a child; similarly, the outgiving breath, symbolically signifying a mere wish to become many in the substratum of all-permeating consciousness, revives the entire creation — so say the Vedic scriptures brought to us in Sanskrit. These Sanskrit scriptures emphasize that the observer should ask the right question and encourage a spirit of inquiry far beyond the limits of empiricism. They also proclaim that reasoning from our own limited experience of life, and using sensory information based mostly on reductionism, does not reveal the mystery of the substratum, which is consciousness. The nondual all-pervading consciousness is independent as well as connected with the observer asking the intelligent question about consciousness. Therefore, the individual consciousness of an intelligent observer is a very important factor.

This leads to the question of whether a human being is the only intelligent observer or not? Experiments show that the timing of the death of cells in a Petri dish is predetermined and can be predicted. Also, one of the smallest living creatures on Earth, the

amoeba, moves away from poisonous bait implying an intelligent conscious choice. But, are these simple life-forms conscious? The Sanskrit scriptures answer such dilemmas beautifully. The scriptures outline the different levels of mind and the levels of intelligent conscious choice. While all creatures that respond with signs of life have been endowed with the soul-principle of individual consciousness, even the so-called inanimate objects have been imbibed with some level of consciousness. The scriptures refer to the presence of a salient energy principle called *prāna*.

Prāna or the vital life force has been aptly called a self-intelligent principle due to the proximity of consciousness, both within and without permeating as nascent energy by which communication takes place in the substratum of consciousness. Even early embryologists studying the growth and division of somatic cells in the formation of the spine and brain hinted at the presence of a vital force as the impetus. The Sanskrit scriptures clearly distinguish the presence of *prāna* in the all-permeating consciousness implying that an individual cell in a Petri dish or an amoeba need not have the same questioning mechanism of the ultimate reality as a human being, yet it still demonstrates conscious choice based on a stimulus. The same is true of plants that have a mind but do not exhibit the pain mechanism through a nervous system similar to humans or animals.

Ultimately, the questions about consciousness and the levels of mental awareness as such rest upon the question and the questioner. It is, of course, apparent that the questioner must be intelligent about this ultimate point of reference or intuition of the ultimate reality, which is consciousness. Here, therefore, is the beauty of the Sanskrit scriptures delineating the supreme consciousness (or *Brahman*) with respect to the observer or the questioner who is then the individual consciousness (or *ātman*). When full intuition of reality dawns and one reposes in the changeless nondual consciousness, then the distinction between the two is irrelevant. Thus, *ātman* and *Brahman* become interchangeable as the substratum of all energy and manifestations.

Mind and Matter

Often consciousness is confused or labelled as a level of the mind. Even when one says, "I do not know anything.", he or she has not stopped knowing, and he or she is conscious of his or her existence. This feature of being conscious or consciousness itself cannot be negated. Even when one says, "There is only the void.", one is making the statement about the nullification of the mind and not of consciousness. While the mind may be negated or empty based on lack of thought constructs, one cannot negate the awareness of being conscious, otherwise one would not be able to say anything at all.

It is the same with the enigma of sleep. The mind may be called inactive, but upon waking up from sleep, the person recalls by saying, "I did not know anything, I felt so happy." Thus, happiness was felt because of the absence of mental agony. However, consciousness could not be negated, even though the first part of the statement refers to the presence of ignorance while in sleep. A neurobiologist would refer to this state of sleep as not being conscious, but rather a state in which the brain is actively sorting out and discarding unnecessary information collected during the day before storing the rest of the information. Therefore, the neurobiological 'lack of consciousness' state is actually recalled as a happy state by the same person upon waking up. The fact is: if the person became devoid of consciousness during sleep (and the brain were only sorting out information) then there would have to be another consciousness to watch this phenomenon (as validated by the person recalling happiness!). This would lead to a problem of infinite regression that we would all cringe to avoid facing. The belief that the brain is the ruler of consciousness once again creates the classic Western fallacy of matter over mind! Or, should we say matter over consciousness?

Because many often ask, "What is the mind?", Vedantic logic declares that the question implies that the mind is not self-illuminating. Therefore, the inquiry must reach beyond the time and space boundaries of the senses and the normal modes of the

mind. From a Vedantic perspective, mind is still at the level of matter. Matter is clearly part of the contents of consciousness, and not to be confused with the subjective consciousness by which all inquirers probe the objective world. Vedic knowledge not only provides the basis for the scientific pursuit of the laws of nature, but further probes the *aparā-vidyā* (physical analysis of the created world) in the light of the underlying conscious reality, or the *parā-vidyā*.

Witnessing Consciousness

There is the one and only eternal subject that is the reference point of all mental formulations and enquiries, the Sanskrit scriptures proclaim. One unbroken consciousness is the eternal subject. It is not an object of knowledge. The knower can never be objectified. The knower is verily the seer — the conscious entity. How would one objectify that with which one is seeing the object of knowledge? Even though, the object of knowledge may not be real, its knowledge is a reality. Knowledge can never be negated and knowledge can never be non-existent. Otherwise, consciousness would be divided and one would again fall into the trap of infinite regression with this approach.

When the knower and the knowable are regarded as united, the knower appears like the knowable and the knowable like the knower. This is called nescience or *avidya*. However, this union of the seer and the seen is neither spatial nor in time. To classify everything in the dimension of space/time is a fallacious approach. They are neither staying side by side nor a mixture of characteristics. The union becomes possible due to the witnessing power of the consciousness. We can even call this the witnessing consciousness. The mind, senses and the body are the object of the witnessing consciousness, which is thus always the subject. In *Brihadāranyaka Upanishad* (4-5-15) of the Vedanta literature, there is a beautiful statement — Where, for this knower, all has become *àtman* alone, there, what can one see and with what?

Knowability is not a characteristic of the seer, nor is the witness-consciousness present in the seen. Correct knowledge is that the seer is the consciousness, be it individual consciousness or

purusha and is distinct but pervades the primordial nature or *mula-prakriti* from which then arises the manifested nature.

This ultimate knowledge of the substratum or the fourth state (the consciousness as opposed to awareness in the wakeful, dream or sleeping states) is neither attainable with the aid of ratiocination nor refutable by logical reasoning (*Kathokopanishad* 1-2-9). Reasonings bereft of the support of revelation (or direct and immediate intuition), but owing their origin only to human speculation can never be deemed as final.

The substratum of consciousness as the field of play for the energy or the *shakti* is like the allegory of the silence and interplay of thoughts. When one is tired of the chatter of the mind, wanting a respite from incessant thoughts, one can stop the thoughts arbitrarily in time, albeit perhaps for a short interval. Thereafter, once more the thoughts arise. The fact that one can stop the thoughts for a while and repose in silence indicates: (a) that silence is the higher desirable state, because one wants to become silent being tired of rampant thoughts and (b) that thoughts do not touch silence, otherwise the nature of silence would be modified. Similarly, the interplay of creative energy, both at micro and macro scales, does not touch and alter consciousness. Consciousness stands alone as the eternal witness. The all-permeating consciousness is also the substratum for the individual observer.

The age-old philosophical study of *Brahma-vijñana* has hardly anything to do with the study of the objective universe. In spite of the extraordinary claims of the physical sciences to give definitive, exact answers, it must be noted that the method of defining a hypothesis, making observations, obtaining results that are reproducible or verifiable and further postulating or adjusting the hypothesis or developing theories, necessarily restricts the scientific sphere of investigation to the objective portion of observable phenomena; be it the brain or the distant galaxies.

The Bridge between Philosophical Nuances

The *Bhagavad Gita* has been regarded as the bridge or the common ground for two systems of philosophy, connecting the

nuances of *Vedantic* thought with the unified cultivation-oriented approaches of *Yoga*. Similarly, the *Patanjali Yogasutra* has been regarded as the common platform between the Sāmkhya and Yoga philosophies. Both of these Sanskrit treatises have been regarded as havens for the *yogis* who embrace both the Vedanta and the *Sāmkhya* systems.

Vedanta does not lay claim to being the result of the study of extraordinary teachings of an authoritative prophet or of any other inspired teachings. The Veda is not recognized as being composed or spoken by an omniscient God at any particular point of time. The Veda does not claim any superiority over other writings merely on the basis of it having a divine origin. Therefore, the argument in favour of Vedanta as a valid source of correct knowledge rests on far more significant grounds than that of its divine origin. Thus, a repugnant fallacy of mutual dependence is clearly avoided. Otherwise, inasmuch as the validity of the Veda has to be depended upon for establishing the omniscience, the omniscience of God has to be depended upon for establishing the validity of the Veda.

Instead, the whole emphasis is on experiential knowledge or direct and immediate apprehension of reality. While Yoga establishes a method for systematically approaching the ultimate reality of conscious experience, *Sāmkhya* defines the science behind it in a detailed, reductionisitic manner. Therefore, what is presented below is a synthesis based on a common ground of practised and experiential knowledge of a profound system ratified by the *Bhagavad Gita* as well as the *Yogasutra* by Patanjali.

Kriyayoga as a Coherent System of Meditation

Kriyayoga is a system of meditation techniques for personal spiritual transformation. This method is one of the most profound concentration techniques, and, in the timeless repertoire of India's spiritual sciences, it is considered a royal path. As indicated above, its foundation principles and in-depth methodology are defined in the *Bhagavad Gita* as well as in the *Yogasutra*. The secret verses of the *Yoga* scriptures are fully revealed through mystics and

Himalayan *yogis* who have achieved perfection through their practice.

An aspiring pupil of Vedanta will usually first study the text called *Panchikaranam* and then the crown jewel of Vedantic thought — the *Māndukya Upanishad*. This student will find common ground in the understanding of the three states of awareness and the transcendent fourth with the practical method of the *samyama* techniques of *Kriyayoga* as laid down in the *Yogasutra* as the final three stages of the eightfold path of *Ashtanga-yoga*. The *samyama* techniques rest on the three stages of concentration, namely, attention (*dhāranā*), union (*dhyāna*) and illumination (*samādhi*), and rely on the use of AUM as clearly annotated in the *Māndukya Upanishad*.

Kriyayoga scientifically cultivates the body and the powers of concentration by training the mind to become one-pointed. Practising the breath awareness techniques enables the mind to reclaim its underlying quiescent state. By simply introspecting or relaxing, one does not free the mind from sensory stimulation and its attendant distractions. But, in *Kriyayoga* practice, the mind is traced along the pathways of the life force in the domain of the central nervous system. Thus, the life force, hitherto largely dissipated, then becomes synchronized with the mental tracing along the specific nodes and pathways of the nervous system. This process is enhanced when it is coupled with the movement of the breath along the same pathways. An inward breathing technique allows optimum oxygen absorption by directing the inhalation and the exhalation so that the meditator feels the ascending and descending currents of the life force, respectively, along the routes of the mental tracing.

When the mind is focused on the life force and is otherwise empty, the full impact of the technique is then harnessed by silent repetition of the primordial sound syllable AUM at specific points and areas. While the AUM can be spontaneously felt in synchrony with the heartbeat, with deeper practice, the meditator is able to feel the AUM as the sound, its attendant vibration, and light. The meditator then cultivates the triple divine streams of sound, vibration

and light in harmony with the controlled breathing and movement of the life force.

Concentration progressively develops through attention on the sound, meditation with the vibration, and illumination from the light. As a result, the meditator becomes guided on an inner journey. The controlled life force of the AUM-*Kriya* develops deep states of calmness and helps transcend the palpable AUM into the subtler substratum of AUM, that of innate individual consciousness.

The Internal Instruments

The Upanishads (Vedanta treatises) do not simply offer statements of truth for contemplation, but the verses typically have *upāsanā* (meditation) techniques associated with them, which are handed down by the age-old master/disciple oral teaching tradition. Many Upanishadic texts, such as, *Amritabindu*, *Nādabindu*, *Shvetashwatara* and *Māndukya* provide Vedantic links to the Yoga approach and also provide validation of the Sâmkhya science about the sequential origin of the internal instruments of the witnessing consciousness. This is further methodised through systematic breathing and *samyama* concentration techniques laid out in the *Yogasutra* and the *Bhagavad Gita*. The representation of the *chakra* system according to Tantra philosophy also matches the coherent system of *Kriyayoga*. However, unlike some other interpretations, according to the synthesis of the Himalayan yoga tradition, the *chakras* are considered to be part of the physical body and are only present up to the second sheath of *prânamaya-kosha* (see table below).

The Vedantic system of *antahkarana-chatushtaya* (fourfold internal instruments) and the *pancha-kosha* (five sheaths) and the three states of awareness (awake, dream and sleep) are correlated with the three bodies and essential elements within them as per the experiential validation of the Himalayan yoga traditions. The *Kriyayoga* method of sequential deepening of *samādhi* practices as named in the *Yogasutra* yield a clue to understanding the Sâmkhya system. The latter delineates the stepwise origin of the actual internal instruments through the admixing of the *guna* or the attributes (*sattwa* or sentience, *rajas* or mutation and *tamas* or

inertia). The table below is an attempt to represent the experiential knowledge verified and reproduced in the inner laboratory of the Himalayan *yogis* through the ages.

Body (*shariram*)	**Sheath (*kosha*)**	**Constituents**
Physical (A) (*sthula*)	Gross or matter level (*annamaya*)	All physical parts and structure including nerve nodes relating to main *chakras* and major glands
	Vital energy manifestation or life level (*prānamaya*)	Fivefold main divisions of *prāna* + fivefold subsidiary divisions of *prāna* + *chakra* petal-like superfine nerve structures
Astral (U) (*sukshma*)	Thought level (*manomaya*)	Mind centre in anterior fontanel + fivefold *tanmatra* (5 subtle essences of space, air, fire, water, earth) + fivefold *jñanendriya* (5 subtle sense organs) + fivefold *karmendriya* (5 subtle work organs)
	Intellect level (*vijñanamaya*)	Intellectual centre at the pituitary level in between the eyebrows
Causal (M) (*kārana*)	Blissful core (*anandamaya*)	*Brahma-mandala* (field of *Brahman* as seen in *samādhi* as the total receptacle) + *mula-prakriti* (dormant creative nature principle) + *sukshma-prāna* (subtle energy sphere) + *ahamkāra* (sheath of ego) + *chitta* (heart of subliminal memory and latent impressions) + *ātman* (individual soul inside the *chitta* indirectly seen when in *asamprajñata samādhi*)

Table 1. An inexhaustive list of bodies, sheaths and their constituent parts.

The five sheaths should not be misunderstood to have defined boundaries, rather they are progressively subtler and they permeate into the grosser levels. Ramana Maharshi of Arunachalam, a great contemporary saint had pointed out the error in the notion of sheaths that fit one within another. He referred to the scented scarf as a metaphor. It has the material, texture, dimension, colour and scent corresponding to the sheaths of matter, life, mind, intellect and bliss. He pointed out that the five aspects of the scarf were not distinct but coexisted together in every nook and cranny of the scarf. In the same way, the five sheaths are integrated functionally and energetically, encapsulating the individual soul.

The actual sequence of creation beginning with *mahat* arising in *mula-prakruti* due to an imbalance in the three attributes (*sattwa*, *rajas* and *tamas*) as per the Sāmkhya philosophy is beyond the scope of this presentation. However, an attempt is made here to discover the nature and properties of the astral body and the causal body as seen internally by the yogis through their *jñanachakshu* (by the light of the inner eye). As stated in the example of the scarf above, even though there is no clear boundary in the field of influence of these subtler bodies, there are shapes and constituents that clearly emerge when the observer investigates his or her internal instruments of knowing through *samādhi* techniques.

The Domain of the Physical Body

Unlike interpretations such as in Vedantasara by Sadananda, the synthesis according to the *Himalayan* and *Kriyayoga* tradition rests upon verification of the constituents through experiential knowledge of *samādhi* techniques of *samyama*. Fortuitously, as stated above, these observations, by and large, fit with the paradigm presented by all the major philosophies. Even if mastering these *samyama* techniques of the *Yogasutra* or the hidden methods of meditation of the *yogis* might be a daunting task for a casual seeker, the model presented here will not seem as mysterious, if salient features are investigated by testable hypotheses.

The physical body, according to the philosophical/yogic definition, consists of all the physical systems, organs and glands

with the nervous system being the subtlest and overriding amongst them. Although the brain is the seat of the central nervous system and the medulla/pons areas include the cardiac and breathing centres, the heart seems to be a very special organ by virtue of the sinu-atrial (SA) node being the pacemaker of life. One can be brain-dead so to say and yet be kept alive by this pacemaker activity. In a way, the heart controls the beat of life. The English word 'rhythm' signifying beat is rooted etymologically in the Sanskrit word *hridayam*, the latter meaning the heart.

Unlike the mistaken interpretations made by casual seekers, the mystics have actually demystified the *chakra* system. The beginner level meditation techniques using the *Kriyayoga* system or the *samyama* method of *Rajayoga* reveal that the *sushumna* is verily the spinal cord and the *chakras* are based on the actual location of nerve nodes connecting functionally to glands and organs in front of the spine. There is nothing astral or mystically hidden about the *chakras*. The ganglion ladder on the two sides (and slightly ventral) are indeed the *idā* and *pingalā* of the *Yoga-Tantra* literature. However, the subtler *chakra* superstructures (petal-like) projecting in front of the spine into the body mass are very subtle (*jñanavāha*) and are more in the domain of the second sheath called *prānamaya kosha*. They can be considered to be the subtler aspects of the nervous system, and are connected with the location and migration of *prāna* currents. Thus, the *prānamaya kosha* permeates and envelops the entire grosser sheath called *annamaya kosha* (also see Table 1). Upon death, some *prāna* is left behind to help putrefy and effect an elemental merging of the gross body, while the rest of the *prāna* helps the astral and causal bodies to ascend — this is what the scriptures affirm.

The Domain of the Astral Body

It is a common misunderstanding that the astral body is identical in shape to the physical body; and moreover, confusingly called the ethereal body. However, the yogic inner vision ratifies the coherent picture presented by the philosophical texts. They tell us that the *prānamaya kosha* is a sort of field encapsulating and matching part for part the *annamaya kosha*, whereas the astral

body is seen as an egg-shaped object (*lingākāra* or *andākriti*), wider at the bottom than the top.

The astral body or the *sukshma-shariram* principally includes the mind and intellect. It is seen in *samâdhi* (with *jñanachakshu*) to be fairly large in size. It is made up of the *pancha-tanmātric kosha*, the five subtler essential elemental forms of space, air, fire, water and earth (gross matter). The *Sāmkhya* system provides a detailed account of its origin tracing back sequentially to the *Mahat* and the three attributes (sentience, mutation and inertia). At the apex of the body is the locus of the mind. The yogi can see the thoughts form. They are radiant white in appearance during *samādhi*. The shape and location of the astral body is shown in Figure 1, where the astral body is shown to be just above the level of the eyes. The white locus of the mind centre is about an inch inside the anterior fontanel. The sitting meditator is an illustration of the *prānamaya kosha* of the physical body. The yellowish egg-shaped astral body is inside the brain (as shown on the right of Figure 1). The thermometer analogy of the *sushumna* is a *Kriyayoga* representation of the spinal cord.

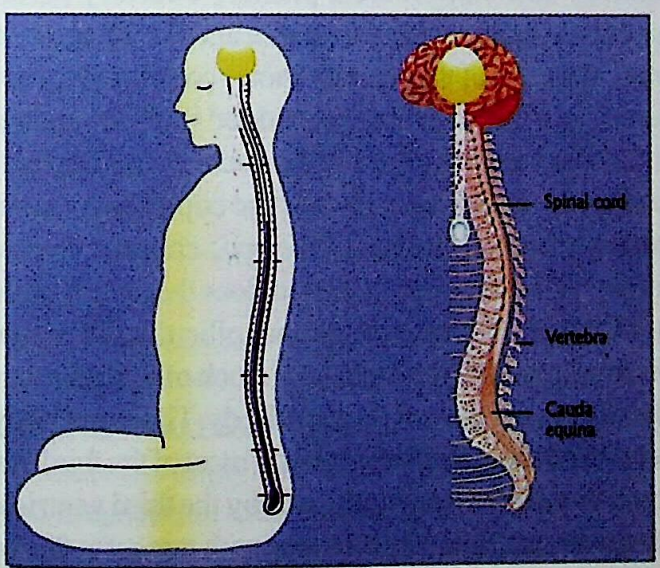

Figure 1. The shape and location of the astral body (in the head) and the causal body (in the heart).

The larger yellow portion of the astral body implies the intellect and its field of influence. While the mind centre is involved in deliberating on the thoughts and images, the intellect then affirms and decides. Figure 2 shows a horizontal cross-section of the astral body with all the components as per the details given in Table 1. The outer ciliary structure and the dotted outer band is the *pancha-tanmātra*. There are five tangerine-coloured spheres representing the *karmendriya* (subtle work organs) and five bluish, moon-coloured spheres representing the *jñanendriya* (subtle sense organs). There is a yellow field, which is the domain of the intellect, around the white centre, which indicates the activity of the mind. The conic connections are the *prānic* communication between the mind centre and the subtle organs; the latter are in motion near the periphery as shown by the ten spheres in Figure 2. The *yogi* sees these conic connections in *samādhi* and perceives them as something akin to sparkling movements.

Now, let us look at the astral body in relation to the actual areas of the brain whereupon it sits. The egg-shaped structure of this subtle body covers most or all of the language comprehension area, auditory association area, primary auditory cortex, the olfactory cortex, speech formation area and the gustatory cortex in the brain. Portions of the primary motor cortex and the primary somatosensory cortex are also embedded in the domain of this astral body. The bony labyrinth of the cochlea touches this astral body; and the receptor hair cells and the cupula are also in very close proximity to the astral body. The optic chiasm comes within the boundary of the astral body, and so does the lateral geniculate nucleus (LGN) and the entire superior colliculus. Therefore, the suprachiasmatic nuclei (the biological clock of the brain) are well within the domain of this subtle astral body. The astral body rests just above the fourth ventricle containing most of the third ventricle inside it and wedged in from both sides by the third ventricle. The relation to the thalamus is also fortuitous with respect to the location of the astral body. Like the third ventricular wings, the hippocampus and the amygdala also enclose the outer portions of the astral

body. The positional overlap with the pituitary, pineal body and the entire diencephalon area should also be noted. The entire reticular activating system also originates from the imaginary centre of this egg-shaped astral body.

Of course, a neurosurgeon will not be able to cut through this subtle body with a scalpel and it can only be scientifically studied through testable experiments on its functionality. A *yogi* is able to see these phenomena in a repeated and reproducible manner through deep and stepwise training in the *samyama* techniques as per the guidance of a Master who is adept in the scriptural promise of inner revelation.

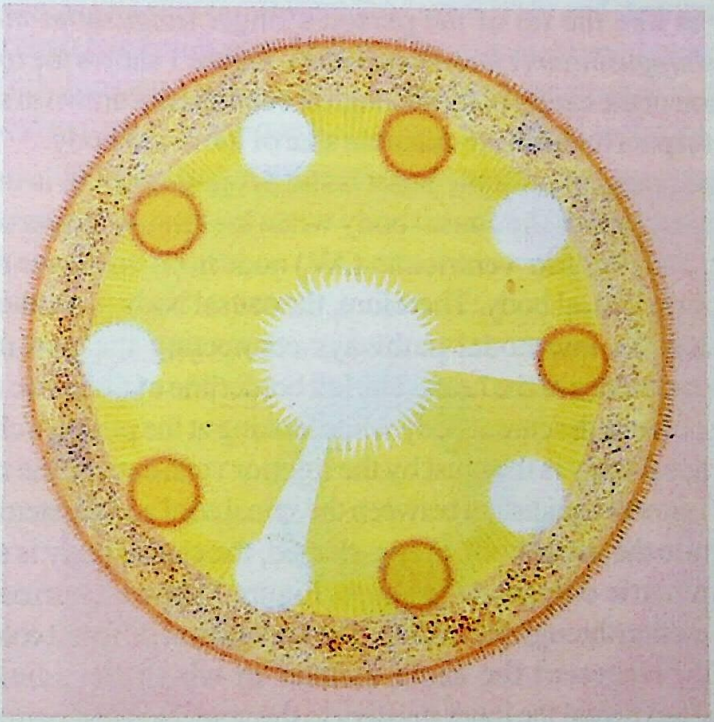

Figure 2. A horizontal cross-section of the astral body as perceived during *samādhi*.

Though the mind and intellect centres are part of the astral body, this does not imply that they are localised functional organs restricted in space and time. The field of the mind is infinite, and so is its intellectual counterpart. The egg-shaped astral body becomes established as a reproducible inner observation through the *samādhi* techniques laid out in the *Yogasutra*.

The Domain of the Causal Body

The even subtler causal body or *kārana-shariram* is perceived in the spiritual heart in this visionary model of the yogis. The two other components of the fourfold internal instruments, namely, the ego and the *chitta,* are in the field of the spiritual heart. Of course, this causal body cannot be cut into by a heart surgeon. It is a subtle spiritual heart that is located just below the base of the actual physical heart aligned exactly along the midline or the sternum. The scriptures hail this location to be a distance of ten fingers width above the navel and say that the size of this subtlest body is like the tip of the person's finger (*angushtha-mātra purushangushtham cha samāshritah*). Figure 1 shows the rough location of the causal body although not completely drawn to scale with respect to the more accurate size of the astral body.

The pacemaker of the heart is the SA node, which is in the upper left side of the causal body when looking at the person's chest; and the atrio-ventricular (AV) node is on the lower right side of the causal body. Therefore, the causal body is situated in between the internodal pathways connecting the two most important nodes of the heart. The left borderline of the aortic arch almost bisects the causal body while looking at the person's chest. The causal body is thus just by the inferior vena cava in the right atrium almost equidistant between the spinal cord and the sternum.

While the astral body is egg-shaped, the causal body is seen as symmetric ellipsoidal in shape. Figure 3 shows a horizontal cross-section through the middle. The six layers of different colours roughly represent the same manner in which the *samādhi* techniques reveal the inner mystery to the yogi. Detailed names of the techniques are given in the Yogasutra and an explanation of these methods is beyond the scope of this paper.

In the beginning, only the outer glowing white sphere is beheld. This is often called the receptacle of the spiritual heart in the yogic parlance. The correct philosophical term for this field is the *Brahma-mandala* or the field of *Brahman* for lack of a better translation.

Within it and permeating all the way inside is the field of *mula-prakriti* or the innate nature principle. According to Sāmkhya

philosophy, the *mahat-tattwa* arises out of the interplay of the three attributes (sentience, mutation and inertia) from within the *mula-prakriti*. The yellowish colour in Figure 3 is exactly as it can be seen in the deeper *samādhi* techniques.

Within this domain is the *sukshma-prāna*, which is sparkling beige in colour (resembling the colour of a morning dew drop). This is a very subtle form of energy responsible for relaying information back and forth between the causal and the astral bodies. It is to be noted that the causal body is positioned almost directly below the astral body along a person's central vertical axis. This subtle *prāna* shoots out from the causal body and re-enters again through five points near the top of the *lingam*-shaped causal body. While looking at the person's chest from the front side, the left-most exit point is the one that carries the signal to the SA node.

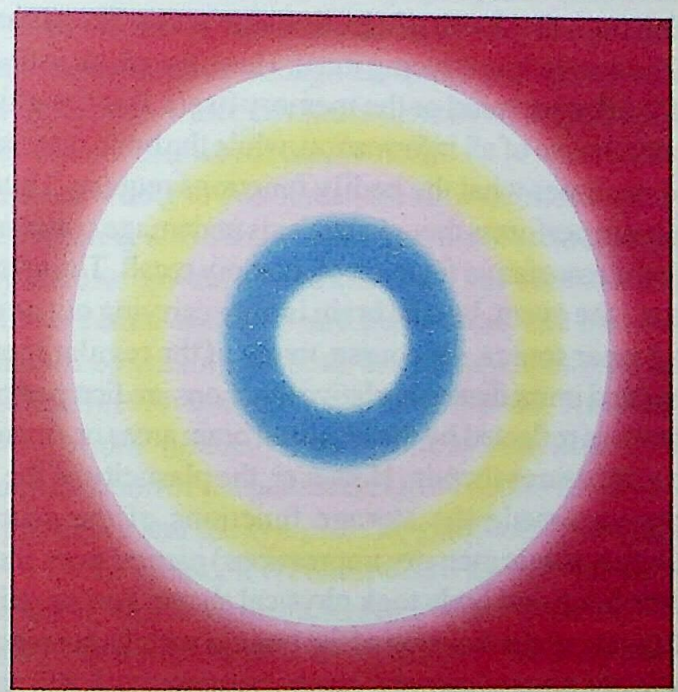

Figure 3. A horizontal cross-section through the symmetrical *lingam*-shaped causal body as beheld in deeper *samādhi*.

The blue-green sphere encasing the inner white *chitta* is the sheath of ego. Just like the thin husk of a peanut, the *ahamkāra* surrounds and serves as the gate-keeper for any transaction with

the *chitta*. The latter is where subliminal and latent impressions are stored as the root of all thoughts, speech and actions. The yogi can even subtly see the *chitta* corresponding with or relaying the information to the higher spheres outside the body, beyond into external subtle realms — the cosmic *chitta*. The sheath of ego is said to be like *mayur-grivā* in yogic parlance or like the neck of a peacock in colour. All information stored in the *chitta* is stamped as 'belonging to me' by the sheath of ego. And, it is through the *asamprajñata samādhi* that this sheath of ego helps in reflecting the *ātman* (or the individual seer) in the *chitta*, thus revealing itself. The bright white spot (the size of a poppy seed) in the centre of the *chitta* is the symbolic representation of the individual soul. Therefore, while the seer cannot be the object of meditation or see itself, it reveals itself in the *chitta* due to the reflection from the sheath of ego, the latter acting like a mirror. It is as if the seer helps in seeing itself. Here, the *chitta* is thus the lake of the deeper mind or the memory itself. It is the ultimate subtle storehouse of all information, while the brain only carries out and mediates what the bodily functions require. Thus, the human brain performs thought analysis and image construction through the associative function of memory recall. The synapses help recall the event, but the brain is only carrying out an order from a deeper source. Of course, many of the regular memory functions and immediate correlative functions are first performed in the brain as reflected by the localised brain areas or changes in neuronal structures therein. However, the plasticity of the brain does not supersede the storage functions of the so-called *samskāra* (or subtle memory impressions) carried from the time before the brain and body took physical shape! As complicated and intriguing as the function of the brain is with its neuronal and glial mass, the onus of carrying out the purported task still rests on the *chitta*; and this is why the *chitta* is often simply called the heart or the supra-memory. In the light of its fascinating design, the illustration presented in Figure 3 can be considered as an extraordinary object for meditation on the internal instruments of the spiritual heart (or the causal body).

The Connectivity between the Causal and the Astral

The *sukshma-prāna* directly connects the causal level of information to the astral body; and it brings back the information for storage into the *chitta* through the sheath of ego. However, there is an additional channel of information processing through the *sushumna* or the spinal cord. The cardiovascular function is regulated primarily by the control centre of the medulla oblongata, which relays signals to the heart and blood vessels by way of sympathetic and parasympathetic neurons. The pontine, the dorsal and the ventral respiratory group of the pons and the medulla are situated between the midbrain and the spinal cord. There is a direct parasympathetic preganglionic nerve from the dorsal motor nuclei in the medulla to the heart tissue, which then connects to the SA node with just one intermediary synapse in between. With regard to the AV node, it is a similar case. There is an additional sympathetic connection through the spinal cord and sympathetic ganglionic chain, which connects directly to the SA node. The same applies in the case of the AV node.

Thus, according to this model, the flow of information is in a circuit beginning with *sukshma-prāna* to the SA node pacemaking activity and also upward to the astral body. The information carries on to the medulla and pons and then enters into the feedback mechanism consisting of both the parasympathetic and the sympathetic nerves connecting with the SA node. Therefore, both the direct *pranic* link and the nervous system link enable the feedback function of the pacemaker to be achieved. In this case, the vagus nerve and the sympathetic ganglionic chain are both involved for the grosser level of connectivity with the SA node.

The reader will recognise a scenario where the subtle feelings provoke a faster heart beat as an immediate first response while facing a sudden threatening situation. It takes time for the mind and brain to analyse and react to the faster heart beat in such cases. The point is that the *samskāra* in the *chitta* effects an immediate recognition of past memory even before the rational faculties located in the head have had time to react. Therefore, the response from the SA node and the AV node precedes the

thoughtful response or mental imagery. This is just one example of the flow of command in the chain of subtler to subtle to gross levels of administration in the human observer. The causal body engages the astral body and through the mind the brain is utilised, the latter bringing the domain of subtle activities to the level of what is physically observable. From the nervous system to the other physical levels of organisation, the body is then controlled by the commands from the brain. Therefore, the plasticity of the brain is not to be confused to be the ruling entity in behavioural attributes, even though the brain is very much needed to project or recall aspects of subtler memory stored in the heart or the *chitta*. Careful analysis will affirm that this model, even though not fully explained here, does not violate our understanding of medical conditions like coma, anaesthesia or even clinical conditions of schizophrenia, depression or bipolar tendencies. But, rather it helps us to understand the enigmatic phenomena of near death experiences (NDE) or the uncharacteristic behavioural changes that come about in the recipient of an organ transplant.

The Age-old Ethos of the Practitioners

What has been presented here is an introduction to a deep subject touching upon a synthesis of the deep experiences brought about by the actual meditation practice of the yogis as per the guidelines set forth in the Yoga treatises, supplemented by direct oral methods of teaching amongst esoteric lineages in the Himalayan traditions. To sum up, this model brings a coherent understanding of, at least, three systems of philosophy, namely, the Vedanta, Yoga and Sāmkhya, and is therefore, at the least worth serious investigation. *Kriyayoga* has been hailed as the common ground spanning the path of yoga, the path of knowledge and the path of devotion. But, more importantly, this profound system of meditation practice enables a deeper understanding of the nomenclature mentioned in the philosophical texts regardless of the discipline. Therefore, even the *chakra* system of the Tantra and its overlapping precepts in Yoga can be better understood through this common ground of the Himalayan yogis.

The topic of consciousness is rendered at different levels with various interpretations. Terms like collective consciousness, global awareness, cosmic consciousness, and individual consciousness are frequently used and recently there is an emerging use and investigation of consciousness in the scientific domain (especially by neurobiologists). Research related to consciousness, which to a greater or lesser extent uses the meaning of consciousness in the scriptural sense, is being conducted in the fields of psychotherapy, clinical psychiatry, social psychology, developmental psychology, cognitive science and neurophysiology in addition to the medical-nonordinary states to name a few areas. The paradigms are varied and research results are usually not coordinated or exchanged through a common forum. All this makes it difficult to focus on the ultimate issue but more importantly shows our inability to define this eternal subject — the witness of all. All said and done, consciousness is not an object of knowledge if we stick to its ultimate meaning or usage. Neither should it be called a level of the mind, for when one says, "My mind is restless.", one implies that the mind is separate from the witness, which is the consciousness. We should first repose in the age-old wisdom of philosophical traditions and the practised reproducible results of the yogis before we limit our understanding to the brain as being the cause of consciousness.

It is widely known that those who follow the path of devotion prefer to feel the seat of consciousness in the heart, whereas those striving on the path of intellect alone usually consider that the brain reigns supreme. The question of whether the seat of consciousness is in the pineal body, first of all assumes, without a proper paradigm, that there is a seat of consciousness and secondly, only looks for that seat where the intellectual reasoning is perhaps guiding us. According to the yogic adepts, intellectual reasoning devoid of revelation or deep experiences of the subtler performance of the mind creates mere speculation.

The Sanskrit scriptures do portray a unified view provided it is studied under proper oral guidance through the traditional methods

that unravel the metaphorical or deeper meanings. The study of the philosophy requires a thorough training in Sanskrit language. Unfortunately, much of the depth is lost with shallow study of the language itself. A half-hearted study of the language has led to erroneous conclusions about the intended purport of the verses that are central to the core thesis of profound questions about consciousness.

The head and heart symbolism of reason versus feeling is a common experience. This model lends credence to the contrasting situations we face in our lives. When one is extremely thoughtful trying to resolve a problem, one spontaneously taps with a pencil on the forehead in between the eyes. This experience implies that our intellectual faculty is in the lower forehead level of the brain. On the other hand, when one says, "I did it.", one does not spontaneously point to anywhere on the head but the hand invariably touches the heart area; thus implying that the ego or the *ahamkâra* is identified within the heart area. These simple examples of daily experience also support the model of the internal instruments presented here.

While the scriptural texts point to the transcending of ego or egoism, they never propose the destruction of ego as is often erroneously or loosely suggested. While ego is a barrier to be transcended in order to achieve deeper experiences or higher meditative states, it is the sheath of ego that is the saviour. Firstly, the sheath of ego enables one to feel that one exists, otherwise one would not feel any identity or any urge to seek or merge. Secondly, the sheath of ego that encapsulates the *chitta* helps in revealing the witness consciousness through the *asamprajñata samādhi* method of the *Yogasutra*. How else would the ardent practitioner know the eternal subject — a yogi would ask? The subtlest of information packets in the form of *samskāra* in the spiritual heart arise with the help of *sukshma-prāna* to become *vritti* at the level of the astral body in the head. And, then the brain unravels and manifests them in a more tangible form. Therefore, the subtle to gross transition causes the flow of

information from *chitta* to ego to intellect to mind (thought level) to sense organs to the brain, all due to the witnessing power of the seer. The changes in the cellular density or structure in specific areas of the brain do not precede the subtler and higher administration of these information packets. This is a key point in the study of consciousness. To quote from the exalted statement by Yajñavalka to Maitreyi in *Brihadāranyaka Upanishad*, where he sums up the eternal quest: With That shall you know all; with what shall you know That?

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Introduction to Kabbalah

AVRAHAM ELQAYAM

1. What is Kabbalah?

The term 'Kabbalah' has two main meanings, a broad meaning and a narrow meaning. In the broad sense, Kabbalah simply means Jewish mysticism. In this sense, any Jewish mystical tradition and trend, from antiquity to modern times, can be regarded as Kabbalistic. In the narrow sense, Kabbalah means the Jewish theosophy that refers to the mystery of the *sephiroth* — the structure of Godhead.

The word Kabbalah comes from the Hebrew root *qbl* which means to receive. The Kabbalah is therefore best translated as the received tradition, a tradition which was understood to contain secrets. Understood historically, the Kabbalah is a social and ideological trend within medieval and modern Judaism.

The Kabbalah is the esoteric tradition of the Jewish religion. The Kabbalah can be understood as the body of knowledge which is passed on from antiquity to the present day elite. In this sense, Kabbalah is a secret tradition, a body of esoteric texts and ideas which must be protected from outsiders.

The Kabbalist, that is, the person who transmits the esoteric and inner traditions of Kabbalah, is called *mequbal,* which in Hebrew means 'he who has received'. The Kabbalist is therefore not always the mystic, the figure who makes direct contact with the divine or upper world, obtaining new information or revelation, but can also be one who has received this information from his mentor.

After the revolution of print, the word *Kabbalist* obtained another meaning. A Kabbalist could at this stage be one who 'received' the secrets of the tradition from reading them in a book, rather than personally from his mentor or from his own mystical revelation.

But, what I have said until now is just the external meaning of Kabbalah. However, Kabbalah also has an internal meaning, a psychological and behavioural meaning. It means to give, rather than to receive. The Kabbalah thinks through paradoxes, so *Kabbalah*, which literally means 'to receive', obtains the opposite meaning, and becomes paradoxically 'to give'. The Kabbalist is the person who gives, the altruist. We are born into the world with an appetite: we only want to receive pleasure and fulfil our desires. The Kabbalist, on the other hand, is one who breaks and destroys his ego, who overcomes the desire to receive pleasure, and becomes a conduit, a pipeline. He receives the divine plentitude, the divine energies, but he does not keep it to himself. He passes it on to other people.

2. Between Communion and Unio-mysticism in Kabbalah

Kabbalah is not a monolithic system. There are various trends and schools in Kabbalah and each has its own perspectives and ideas. Similarly, there is not one idea or doctrine regarding the nature of mystical experience in Kabbalah. I would like to present to you two major schools about the nature of mystical experience, both of which originated in Catalunia, Spain, in the thirteenth century. The first is the Kabbalistic School headed by the Barcelona Kabbalist Nahmanides; the second one is the Castilian school, headed by R. Avraham Abulafia.

Nahmanides had a doctrine of communion-mysticism, or, in Hebrew, *Devequt,* which means communion with God. This term, from the root '*dbq*', meaning to cling to, appears first in the Hebrew Bible, Deuteronomy 11:22.

For if you shall diligently keep all this commandment which I commanded you, to do it, to love the Lord your God, to walk in all His ways and to cleave to Him, then will the Lord drive out all these nations from before you, and you shall dispossess nations greater and mightier than yourselves.

The term *devequt* here is closer to adherence to the law, a loyalty and conviction to God's will. For Nahmanides, however, the inner meaning of *devequt* in the Bible means a mystical

experience, a communion with God or with aspects of the Godhead. It is important to emphasize that, according to Nahmanides, God and Man cannot truly mix. Man cannot become a part of God in the mystical experience. He can only draw nearer to God, but can never become assimilated in God.

In contrast, we have R. Avarahm Abulafia, one of the greatest Castilian Kabbalists. According to Moshe Idel's research, Abulafia maintains that through mystical experience man can unite with God, be assimilated and lost within God, be one with God. Abulafia called this sublime state — *hu-hu,* meaning, 'he-he', that each one becomes the other. In this, we can see a possible influence on Jewish mysticism by the Tasawuf, in particular al-Bistami, and al-Khalaj's famous saying 'ana el-haq'.

This is opposite to the position given voice by the doyen of Kabbalah research, Gershom Scholem, who asserted that a major distinction between Jewish mysticism and Islamic or Christian mysticism is that in Jewish mysticism there is no true union with God. However, Abulafia's version of unio-mysticism casts doubt on this thesis. If so, Jewish mystical experience is no different in this regard from Islamic or Christian mysticism.

3. Theosophic Mysticism and the System of Sefirot

3.1 Introduction

The term *sefirot* comes from the Hebrew root *sfr,* which means to count or enumerate, and denotes counting the attribute of God. Another meaning is the *sappir*—the sapphire or the brilliance of the divine manifestation.

The ten *sefirots* were first mentioned in the Book of Creation *(sefer yezira),* which is the first book of Jewish mysticism ever written. The *sefirots* are the ten aspects of the divine personality; they are the mechanisms or structures by which God acts and reveals himself to the world. The ten *sefirots* are created or emanated from the transcendent point or origin of the divine being. Each of these ten *sefirots* has many names, and they are usually configured in a very specific order. The identifications of the specific *sefirots* vary and Kabbalists fiercely debated the nature and

function of each of the ten *sefirots*. However, we can present the most common names and identifications of the ten *sefirots*:

1. *Ein Sof* (Limitless) or *Keter* (Crown)
2. *Hokhma* (Wisdom)
3. *Binah* (Intelligence or Understanding)
4. *Hesed* (Mercy)
5. *Din* (Judgment)
6. *Tiferet* (Splendour)
7. *Nezeh* (Lasting Endurance)
8. *Hod* (Majesty)
9. *Yesod* (Foundation)
10. *Malkhut* (Kingdom)

3.2 The Symbolism of the *Sefirot*

3.2.1 The *sefirot* as the Tree of Life

The ten *sefirots* are arranged in seven levels proceeding downwards from the first *sefirah*, *Ein- Sof*. Their form is that of a tree, the Tree of Life. I should emphasize that the Tree of Life is upside down: its roots are above and draw on the Divine; its branches reach below to the mundane world. This tree represents the inner-life of the divine. The divine manifests itself above and makes contact with the world through the tenth *sefirah*:

As you can see, this transmission from the transcendent to the immanent is mediated by the geometric form of the triangle. The similarity to the *Shriyantra* triangles is striking, and Gershom Scholem has commented on it.

The *sefirots* interact with each other. The Kabbalaist must harmonize them, or align them in their proper order, so that the goodness or emanation of the divine can flow down to the world below. The Kabbalist achieves this by performing the commandments and by praying with specific intentions.

3.2.2 The *Sefirots* as Anthropos

A further conceptualization of the way the *sefirots* are configured is that they reflect the form of a huge human being—the mega-anthropos. That is, the *sefirots* are the Godhead revealed in a structure of the anthropos, the perfect human. The kabbalists have therefore made a distinction between the transcendent Godhead, which has no form or structure, and the immanent of revealed Godhead, which is the divine energies that flow from the transcendent source and form a structure of perfect human. The Kabbalistic term for this is *adam qadmon* in Hebrew—meaning the ancient man.

The kabbalists are divided on the understanding of the meaning of the *sefirots*. Some perceived the *sefirots* as objective, as ontological beings; others argued for an epistemic meaning, in which the *sefirots* are the categories through which man perceives the transcendent. The latter were motivated by their apprehension of a corporeal interpretation *(magshimim)*, that is, they did not want the divine to be perceived as having a physical concrete body.

3.2.3 The *Sefirots* as Self-awareness

One of the main characteristics of kabbalistic thought and literature is sexual descriptions of the *sefirots*, that is the union between the masculine and feminine aspects of the divine theosophy. This topic concerns the sexual and erotic nature of the divine.

The earliest known work of the Kabbalah is generally considered to be the book, Bahir. The book presents a dramatic portrait of the male and female aspects of the godhead. The lowest

of the ten *sefirots*, that is the sefirah closest to the world and man, is *Shekhina*, often termed *Malkhut*, meaning Kingdom. This lowest *sefirah* is the feminine manifestation of the divine being; it is often symbolized in the Bahir as the King's daughter.

As Scholem comments, the male principle in Kabbalah is conceived as a dynamic and active force, in contrast to the conception of male as passive in Hindu symbolism. In the same vein, unlike the active principle of the Shakti, the female principle of the *sefirots* has both active and passive aspects. The upper Shekhina, Binah, incorporates the active and generative aspect of the feminine, whereas the last *sefirah*, *Malkhut*, represents other aspects of the Shakti such as the destructive force of the 'Eternal Feminine'.

What interests us here is the reversal of sexual imagery of the divine. As man relates to the *sefirots* and makes spiritual contact with the aspect closest to him—which is the feminine Shekhinah—he maintains his male characteristics. God is female here in relation to man in this union between the mystic and God.

Basically, in the sexual symbolism of Kabbala, the male mystic is central. The married male who performs the commandment of sexual relations with his wife, actually relates to two females, one physical and the other spiritual, the tenth *sefirah*, Shekhina. In this role, the male mystic symbolizes the supernal male partner of Shekhina in Her relationship with the male sefirah just above her. This relationship is depicted as a sexual union with the ninth *sefirah*, Yesod (Foundation). In turn, the female partner of the mystic below symbolizes Shekhina above. And so, we have two couples, one in the upper world and one in the lower world. The worlds meet where the male mystic enters the upper world and joins with Shekhina.

Another model is based on gender transformation. Here, the male mystic is feminized in relation to the male God. This symbolism appears in philosophic forms of Jewish mysticism where the human intellect receives the intellectual overflow from God, the active intellect. God as the active intellect, or in some Kabbalistic systems, the tenth *sefirah*, is configured as the male, since this *sefirah* emanates

or sends forth the light or flux to man. Man is configured as female in what is seen as receiving the seed from above.

In these models we see that sexual symbolism in Kabbalah is based on a set of opposites. The male mystic relates to the female Deity, Shekhina. However, when the male mystic is perceived as female, God is again configured as male.

Lastly, Elliot Wolfson has suggested a 'phallocentric' approach to the Kabbalistic sexual symbolism. According to this approach, the mystical sexual relationship is between male and male, rather than between male and female. Both the mystic and God are male. The male mystic relates to the sefirotic world which as a whole is configured as male. This is because the feminine tenth *sefirah*, Shekhina, which is closest to man, is actually located within the ninth *sefirah*, Yesod, which is masculine. In other words, the feminine principle does not reflect the other but the masculine self, the phallus. Like the rib that was taken from the first man in Genesis to create the woman, the feminine is now contained in the phallus to give back to the male what was taken from him. In Lacanian terms, the male does not actually have sex with the female as another being, but with his own phallus that was originally rifted from him, and now is given back to him in the form of the female.

4. Mystical Language and Linguistic Meditation in Kabbalah

4.1 The Generative Function of Language

According to the Kabbalah, the Hebrew language is God's own language, just as Sanskrit is the language of the gods. Hebrew in Kabbalah is perceived as the holy tongue. The Kabbalists continue the Biblical concept that God created the world through language. *Sefer Yezirah,* the Book of Creation, the first Kabbalist book, says: 'God created the world by thirty-two ways of wonder and wisdom.' The thirty-two ways are the twenty-two characters of the Hebrew alphabet and the ten numbers. Hence, God's language is constructed of letters and numbers, a verbal language and a mathematical language.

This means that the existence of the whole universe is founded on language. The foundations of all that exists rest on letter

combinations. Even, man himself is created by the power of letters and driven by the power of language. Every person has a secret combination of letters that is unique to that person. This combination is the person's innermost secret. If one knows this secret letter combination, then, one can know all that is there to know about himself: his past, his future, his character, etc.

Once one knows the secret of combining letters, one also knows the secret of creation. According to the Kabbalah, the kabbalist has the limitless potential to create whatever he wishes by the power of the mystery of letters. One of the more well known stories is the one on the creation of the Golem, the artificial human. The story tells how the Mahra'l Rabbi Yudah Leow of Prague, has created a Golem using letter combination. On the Golem's forehead was a combination of three letters — *Aleph, Mem, Tav.* These letters combine to *form* the word *Emet* — truth, which is one of God's names. The signature of God's name animated the Golem, and the Jewish community in Prague used it for many things, from defense against hostile Christians to various daily chores. But, the happy days did not last forever. Once, on Sabbath eve, when the holy day was about to begin, the Golem suddenly went out of order. It began to go berserk and tear down the Jewish quarter. The frightened Jews summoned Rabbi Leow immediately, although he had already started the Sabbath prayer. Rabbi Leow stopped his prayer, went out of the synagogue, came up to the Golem, and did just one thing: he wiped out the first letter of the three-letter combination on the Golem's forehead, the *Aleph.* Only the last two letters remained, *Mem* and *Tav.* In Hebrew, *Mem* and *Tav* is *met,* which means 'dead'. Immediately, the Golem fell apart and returned to dust. The force of the story is in the power to create both life and death with just a couple of letters. This is what the Kabbalist can do with the power of the letters of the Hebrew language.

4.2 The Meditative Function of Language

One of the main characteristics of Jewish meditation is letter contemplation, which creates a letter-based meditation system.

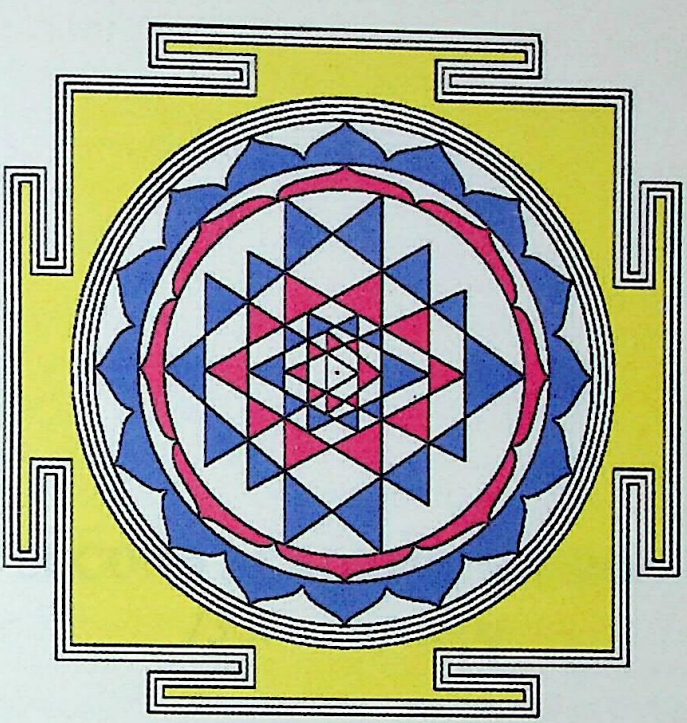
Not just any old combination of letters, but specifically the letters of God's name. In the Bible, God has many names—Lord, Hosts, God. The Kabbalists used mainly the tetragrammaton, the name with four letters, which contains the letters *He, Vav, Yad, He* and refers to Existence. In addition, they have also worked with a forty-two letter name, and a seventy-two letter name. However, the tetragrammaton is considered as God's own proper name, and is the most important one. All other names are merely appellations.

Since the tetragrammaton is God's proper name and reflects His essence, it follows that a meditation means bonding with letters in order to attach to God. The basis for the meditation is various combinations and permutations of the letters that constitute the tetragrammaton. The mystic first writes down the combinations, then pronounces them by lips and tongue, and finally imagines them. The letters are perceived through all dimensions: size, colour, etc. They have both space and volume. Like a cloud in the sky, they grow and develop, until they sweep the mystic on to the other dimension.

Remember also that a person is nothing but a combination of letters, so the letters are the right way to cleave to God. In the deep structure, it means that letters cleave to letters. The mystic who is a combination of letters becomes attached to God through the letters that are God's essence.

Conclusions

In this lecture, we have tried to glimpse some of the rich and complex world, that is, the Kabbalah, the Jewish esoteric lore. We have talked on Kabbalah as both receiving and giving; we have talked about traditions of mysticism in Kabbalah, including unio-mysticism and communion mysticism; we have presented some of the mystery of the *sefirots*, the aspects of the divine through which the transcendent God reaches out to the immanent world; and finally, we have talked about the major role of language in the world of Kabbalah and Jewish mysticism. In all this, we have just begun to scratch the surface. The world of Kabbalah has many aspects and implications. If I have conveyed this, then my work is done.



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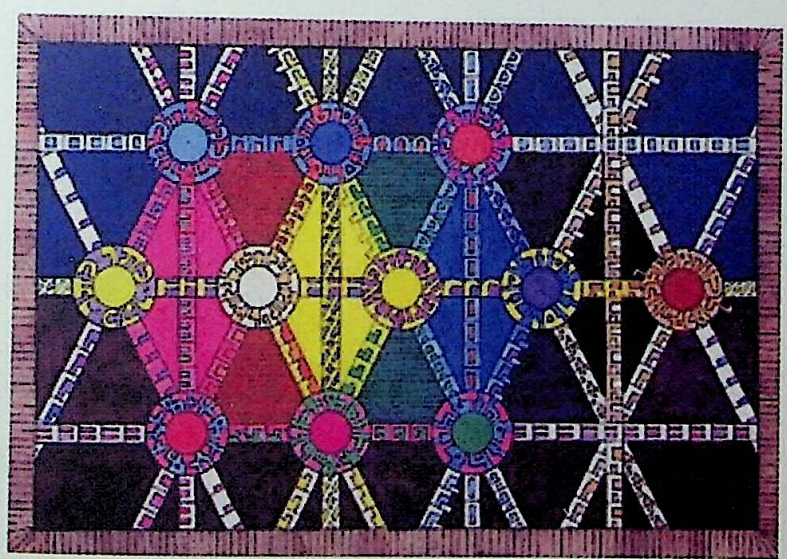

Tree of Life

SECOND ACADEMIC SESSION

13 January 2006

The Path Yet Travelled

I H Azad Faruqi

The year was around 1955. A seven year old boy approached a cot on which a Sufi saint was lying in his house in a township, in eastern U.P. (India). The Sufi saint was a senior professor in a prestigious Muslim seminary and was also actively involved in the freedom struggle against the British colonial rule. The boy reached the cot and repeated, parrot-like, a statement tutored to him by one of the Murids (disciples) of the saint, "I want to go (to a seminary) for religious studies but my parents are forcing me to enter a school with English education." The child had agreed to this plan of a show off as it had the attraction of an opportunity to impress the saint with his made-up religious zeal. The saint raised his eyelids to see who was speaking and a mere look in those eyes broke the lad down, and crying full throat, the boy took to flight. What the boy saw in those eyes was something of a star-like purity, a child-like innocence, the impression of almost an ocean of sorrow and the inklings of the power of a lion. The boy, in spite of his tender age, was struck by the contrast these qualities posed against the filth of his fabricated role of a religious zealot, and hence there was the intense feeling of remorse and embarrassment on the part of the young boy.

Many years passed by; the boy after obtaining a university degree from the University of Delhi was successful in obtaining a scholarship from a university in the United States for further studies. The subject to be studied was 'Religion', not any particular religion, but religion as such, and its various manifestations. The young man, who was around twenty-three years of age at that time, offered a number of courses in Indian religions, including Hinduism, Buddhism, and Jainism, etc. and realized, for the first time, the

richness and eminence of the religious heritage of his motherland. These studies made the young man aware of the fact that religiosity or spiritualism could be made a permanent career or a life-long mission. A free mixing in the American society of early seventies also revealed to him the limitations of the one-sided materialistic approach. Consequently, when loosened from his cultural moorings and free from the pressures of his native society, the young man had to decide what he wanted to make of himself, he decided, for a spiritual goal for his life without being clear of how and when of it.

Once during his wanderings in US, the young man happened to go to listen to a lecture given by a spiritual personality called Baba Ramdas. This person, originally one Richard, was of an American background about whom it was said that he was once a professor of psychology at the Harvard University, but after having become interested in Indian religions, had travelled to India, adopted a Hindu spiritual path for himself and had become a disciple of some *guru* there. However, at the time of the above-mentioned occasion, on entering the lecture-hall, a middle-aged person with long hair in a ponytail, wearing blue jeans and red T-shirt, in vogue in US at that time, was seen on the stage adjusting the microphone. It was only when he sat down cross-legged in an Indian yogi style and closed his eyes as though in meditation, it was known that he was indeed the spiritual person, Baba Ramdas, who was going to deliver the lecture. For the young man the decisive moment was when the so-called Baba Ramdas opened his eyes after keeping them close for sometime. Here the young man found the same eyes with the similar look and expressions which he had encountered in the case of a traditional but authentic Muslim saint and scholar in India, in his childhood and had long forgotten all about it.

As a result of his encounters with the two holy men representing two as different religious traditions as Hinduism and Islam and as dissimilar backgrounds as Indian and American, the young man drew some conclusions. Albeit, his later experience took place at the mature age of twenty-five, it revived and recalled in relief the

older one of the childhood. However, as a result of this second occurrence, it was impressed upon the consciousness of the young man that firstly, there is a Spiritual Reality which turns the eyes of the person coming in contact or communion with it, into a certain type and with a certain imprint. Secondly, it had dawned to the young man that in the field of spirituality, whatever path a person might adopt, ultimately, he or she would reach the same Destination. The later conclusion was confirmed afterwards by this young man, who studied many religious sources including that of the narratives of the spiritual experiences of *Paramahamsa* Sri Ramakrishna.

The third inference from the same experience, which was deducted by this young man after coming back to India was that, since all the spiritual paths within the various religious traditions of the world lead to the same Ultimate Destination, provided followed sincerely, it may be preferable to adopt a spiritual discipline from the confines of a tradition within which one has been born and brought up, which socially and culturally and psychologically as well, may be more practicable and congenial for him. And in this way, after a sojourn of a couple of years of, more or less, a tradition-less life, the young man who is now the author of these lines, was brought back to the fold of his own tradition, Islam, with a predilection for the spiritual path of Sufi discipline in its tradition.

However, in spite of a decision to adopt a spiritual career for his life, the author continued to defer his formal initiation into any Sufi order, mainly because he never wanted his adoption of a spiritual path to be, or to be understood as, an escape from the struggles of a worldly career. Consequently, according to the dictates of the society, he first let himself be appointed a teacher in a university and got established as an author of some books and a score of articles, before starting any actual spiritual exercises beyond the rituals obligatory for all Muslims.

It may be noted that once the author decided to return to the fold of his own family tradition, was naturally attracted towards the line represented by the Sufi saint and scholar with whom he had the occasion to have a brief encounter in his childhood. The

saint being a family relation, he had the opportunity to observe him as well. Nonetheless, the author continued to defer his formal initiation till at a later stage in his life at the age of forty-six, when he felt that he could no longer postpone his proper initiation in a Sufi order, be guided by the instructions of a living *Shaikh* (Master) and get benefited by the *barakah* (grace) of the past *Mashaikh* (Masters) of the order. He had, almost miraculously, a *Khalifah* (successor) of the same saint of his childhood, visiting his neighbourhood. The author utilizing this Godsend opportunity, insisted on the *Khalifah* of his old favourite saint, to admit him immediately in the Sufi order namely, the *Chishtiyah-Sabriyah* order and was granted his request ultimately.

This Sufi order, the *Chishtiyah-Sabriyah*, in which the author was admitted, is in fact a mixture of the four major orthodox Sufi orders in India with an emphasis on a branch of one of them, namely the *Chishtiyah*. The core strategy for the realization of God adopted by the later age Masters of the aforementioned order, i.e., the *Chishtiyah-Sabriyah*, has the following notable features.

Firstly, its method for the development of God-oriented consciousness consists in various modes of the repetition of the name and remembrance of God, and meditation on His person with prescribed themes, till His Presence becomes a real and perpetual experience for the devotee. It may not be that the quality or intensity of the experience is necessarily the same in all times and conditions, but as far as it can be discerned from the writings of the Masters, it is required that it should be unremitting in a perfected Sufi, though getting diluted at times of preoccupation with, or concentration in, other tasks.

Secondly, the later day Masters of this order also evolved an approach to encourage the novices to try to attain the above-mentioned *maqam* (station) of the uninterrupted experience of the Presence of God, even before the *salik* (trainee) has perfected his moral character with the removal of the uncongenial qualities with a saintly life and adoption of the ones agreeable to it. This procedure, though in deviance from the ancient practice to have

the moral character perfected before spiritual realization of the presence of God could be attempted, was adopted, reportedly, for two reasons. First, because the perfection of the moral character is a lengthy and difficult process and the aspirants used to spend years in attempting moral perfection, till many of them died without having attained the experience of the Divine Presence. By providing the novices a chance to attain to the God-realization through the repetition of the names of God, His remembrance, and meditations etc. at first, at least an essential goal of Sufi path would be attained. While on the other hand, it was realized that once the consciouness is coloured by the Divine Presense and attuned with It, it was much easier to get rid of the vices rooted in the carnal self and ego and to cultivate the virtues, such as, selflessness, humility and compassion, than otherwise.

Thirdly, in contrast to some other Sufi orders, the Masters in this order adopted the repetition of the name of God in special formulas with a loud voice accompanied by forceful imaginary beats at the heart, as very efficacious, specially for the beginners in God-realization. This is considered as one of the special techniques associated with this order and in its particular form in practice is called *Bara-Tasbih*. In other matters, especially regarding the importance of the meditations (*Maraqebat*) and austerities (*Mujahedat*), this order is, more or less, like other orthodox Sufi orders.

In the end, the author would like to admit that the description of the techniques and conception of God-realization in the *Sabriyah-Chishtiyah* order, as depicted above briefly, is only partially and imperfectly experienced by the author himself. Most of it is based on the letters or discourses of the Sufi Masters of this order.

Deep Consciousness Experiences

Oded Maimon

Beginnings

My quest for experiences of deep self-consciousness started about a decade ago. The spark and impulse for this search did not come from any specific place, but was accompanied by a strong conviction and a sense of revelation. The revelation seemed to be like a recognition of something, which had always been there and was now reappearing without shape, form or time. Suddenly it was there and intense signals came from all over. Many things that were known before, presented themselves differently; they seemed clearer yet deeper and higher at the same time. The whole experience was like being in the centre of a huge storm in the middle of the ocean in a small sailing boat. The overwhelming experience was not of destruction but of unity, vitality and strength.

This paper is a brief report of my deep consciousness experiences over the past few years, and the transformation that I underwent during this time.

Seeking the Source

a voice out of this world
calls on our souls
not to wait any more
get ready to move
to the original home

your real home
your real birth place
is up here with the heavens

let your soul take a flight
like a happy phoenix

you've been tied up
your feet in the mud
your body roped to a log
break loose your ties
get ready for the final flight

make your last journey
from this strange world
soar for the heights
where there is no more
separation of you and your home

God has created
your wings not to be dormant
as long as you are alive
you must try more and more
to use your wings to show you're alive

these wings of yours
are filled with quests and hopes
if they are not used
they will wither away
they will soon decay

you may not like
what I'm going to tell you
you are stuck
now you must seek
nothing but the source

Jelaluddin Rumi (1207 - 1273)
Translated by Nader Khalili
(Sufi Muslim Tradition)

My research is in robotics and mathematical modelling. In this latter discipline, we find a few mathematical rules to arrive at clear understanding of phenomena, represented by millions of bytes of data. The data may be describing complex dynamics and states in a wide variety of fields and areas: physics, biology, medicine, sociology, psychology, nano-technology and others.

Whatever the particular case may be, mathematical modelling provides us with a means for understanding why and how certain things occur. The information today is abundantly available for us to observe and work with. By thinking bottom upwards to a level above the phenomena, we discover and come to know the rules that create the phenomena. Yet, there are always higher level explanations of, why these few rules exist. What is the source principle and concepts behind these rules?

In my robotics research, I worked top down. That is to say, when I designed robots and sensory devices, I began with a very few clear simple concepts, which are powerful, elegant and rich. These developed in stages into a moving, learning system — a robot. Here, a concept evolved into a phenomenon that produces data and intelligent physical movement while interacting with the environment, which can be observed.

For the people who saw my robots in action, it seemed that the robots were responding and acting on their own free choice. This was obviously an illusion fostered by the fact that unlike many other engineering systems (an automobile engine, for example) it is virtually impossible to implement reverse engineering in order to arrive at the exact algorithm that directed the multiple robot activity controllers, which I had designed from initial concepts, and implemented as an interactive computer-embedded electro-mechanical system.

When designing and developing robotic systems from the start to the end, (with movement capabilities, sensors, and artificial intelligence 'brain'), many triggering questions arose. Other questions and issues arise as a result of personal experiences that I have encountered. These questions and the process in search for answers over the years stimulated within me deep non-linear

thinking which caused internal transformation and led to wonderful new areas of being (what is freedom vs. induced automatic patterns; understanding the deep differences that we clearly feel exist, defining and discovering our personality vs. our needs, etc.).

When I think of my research in robotics and learning system (about which I have written already three books, plus two separate books on design and operation control), it seems that we can proceed and learn automatically from experience, but without understanding the fundamental and underlying principles. But, can we arrive at an understanding of the source of our free will (if it exists at all) — or is it, by definition, beyond us? What actually is our free will and how is it truly manifested?

Similarly, we use all the time natural relationships (such as, π or e), which we believe in and are very useful to our lives, though we know them only by approximation, and from an historical point of view, only recently. Since the purpose of this article is my personal experiences, I will not elaborate here much about science principles, concepts and limits. Details and proof of the scientific investigation in relation to mysticism are presented in my article 'Science and Kabbalah Evolution' (see details in my brief bio-data at the end).

In addition to my formal research, there were high sparks and glimpses associated with many personal experiences (a few are elaborated here) and which took me to different worlds. Such experiences gave birth to feelings of wishing to discover the nature of things, and especially, oneself in other ways. On the one hand, I was aware of my physical limitations (making us close to zero); on the other hand, at the same time, I felt a very powerful, integral part of the universe.

Initially, like a child encountering new experiences, there was confusion. Indeed, I wondered at times, if my experiences of infinity and of out-of-body incidents were not signs of madness. The tension between being an expert in one field and a total novice in this new area of being, created within me an eagerness to learn and propelled me to many new areas of reading, training and discussion with suitable mentors. This, in turn, led me to examine

and practise in depth a variety of traditions (in particular, Yoga, Zen and Tantra, Sufism and Kabbalah).

How did I know where, when, why and from whom to learn? What to believe? What to try? I learnt, whatever I could, from Indian pundits, mystical rabbis and Sufi sheiks. I met many people of all sorts of backgrounds and tried a variety of practices, paradoxes and deviations from the path, always learning from my mistakes and experiences. Eventually, I reached certain understandings, some of which I briefly present here.

Overall, what I have learnt is that the centre of one being is constantly strengthened. It is independent, yet connected and united with the universe. This leads to self-empowerment, freedom, and knowledge. This, in turn, develops into a sense of direction, confidence in what you are doing, joyfulness, aestheticism, compassion and morality.

Developing

Now, in retrospect, I can clearly see phases along my way, although when inside a phase, it was virtually impossible to observe it. For the purpose of this presentation, I will roughly divide the process into five phases. The progress from one phase to another is not straightforward and sometimes it seems that you have reached a phase prematurely, without absorbing the lesson of the previous one. Thus, there are regressions, advances and glimpses.

Throughout the journey, there are trials and experiments that do not always seem successful. Many trials, which may seem like failures, can be very important if they are followed by deep self-awareness. These failures can, nevertheless, lead you to the next level and teach you to know what options are available under similar conditions and which ones to choose. By deviating from the path, one discovers the path and self.

Growing up requires a variety of behaviours: following a path, deviation from a path; engagement in society and separation; togetherness with others and solitude. Then, by engaging in a wide variety of actions, some seemingly directly opposed and

contradictory, can one truly create oneself and develop the ability to think independently and to cope with one's self in this world. Until then, we are apt to be behaving according to the patterns inserted into us, fulfilling what is supposedly (relative) good.

On the other hand, there is the very real possibility of not recovering from certain activities. For example, I have seen a few people torn apart as a result of following wrong *gurus* or of misusing the yogic powers (knowing how to create, control and transform energy) they have achieved. These people were on the way up the spiritual ladder but were totally disengaged or fell apart. They had achieved a certain level when they were not fully created; they were not able to cope up with their own over-sensitive senses and power in new situations.

However, after a while, if one can achieve a deep level of consciousness and knowledge, these automatic reactions would be very rare, and true knowledge would prevail. Specific experiences change during the process, but the concept stays and thus, you create your own deep self. Eventually, being fully created, it gives one freedom, happiness for him or her and the people around.

We have talked about phases in general; now let us look at them more specifically. In the first phase, there is a noticeable glimpse of the infinity and a sense of being a part of the cosmic order. This brings on the realization that bigger things exist. This glimpse passes away but its residue and the longing for it remain. This gives a certain 'born again' feeling, as if, the same things you knew before and felt were so infinitely smaller. You begin to interpret differently things that you previously experienced in your life.

At this point, there is a considerable confusion within one's own self. There are different longings and the environment in which you are functioning (family, friends and work place) is not really used to the new 'out of the box' aspects, which appear in your personality, your actions and thinking.

There are moments when, as if in a dream, detached, you feel the urge to act and to visit places. You know that you have to follow an inner personal call (which supposedly has nothing to do

with the normal course of your life). You get the sense that somewhere there are true answers to questions that are sacred and important (though the questions are not even clear to you). This awareness or knowledge generally comes in a spontaneous way, but sometimes also follows or springs from a particular action or event, such as, a certain intuitive inquiry, a personal crisis, a disease or a sense of danger that one might be experiencing (and even seeking to test the limits and reach beyond).

The experience of the first phase impels you to explore further, to seek out whatever resources seem to be available including sacred locations, esoteric books, special people, and so on. At the same time, you realize that the real, true answer abodes inside you. This is the second phase. This is not easy since you need the space for yourself, and you realize that you have to do your internal work in this space. You have to spend appropriate time with yourself. The term 'space' implies not being 'efficient' in previous (regular life) terms, as so to speak, there is no external results, just pure internal work.

In this second phase, one leaves, to a certain extent, the regular life in order to concentrate on one's inner world, to redirect and reorder one's thoughts in an effort to arrive at selfhood. This is a very hard work and there are no external signs or results as one is used to in regular life.

The 'work' that one performs in this phase is very much different from what one carried out prior to the first phase. The 'work' in this phase is no less intense, yet only successful while carried out in a state of relaxation. You are, in fact, a living paradox: you must give up in order to get; not want in order to have; do while not doing. This is very much contradictory to the behavior that we are used to and educated to accept: to get what we want, we must make an effort; the greater the effort, the greater the possibility of achieving more; and we need more and more to be happy and to be perceived as successful.

Initially, it is very confusing how to cope up with your external responsibilities in this world and still be honest with yourself within the paradoxical assumptions just mentioned before. The good

news is that it will work out, as it later did for me (although, there is no guarantee or a single prescription, and there may be different end results, which I have seen).

The technique for coping with varies from internal concentration and meditation to relaxed but clear contemplation of nature, and watching each and every move and interaction that one is engaged in. Meditation, such as, watching the gap in your own breath, is useful now and for realization of later phases. Every morning should start with contemplation internally, or of nature. The insensitivity of others, which was not meaningful before, is now more noticeable. This increases one's awareness of beauty, and also one's vulnerability.

Awareness is developed. The senses expand (new sounds are heard and new colours seen, both internally and externally). You are more alert, more alive. Your senses are more keenly aware of everything, even such small things and seemingly irrelevant and innocent matters, such as, eating an apple. You feel and smell the apple and as you bite into it, there is meaningfulness to its shape and as it melts within your body. You are not just casually eating, while doing something else at the same time. Something very natural and important is happening.

I recall a particular training (though not the only one) that helped me to invoke the third phase. I constantly asked the question: "Who is in?", whenever I could. In the third phase, you are getting deeper and deeper inside yourself, developing your thinking and the ability to concentrate and control your mind.

This generates a great deal of mental power, control and energy. You can now concentrate on what you want for as long as you wish. You can calm yourself if needed (and often become more introverted). You can easily switch from one topic to another, in a deep, serious, investigative manner, and now you have the freedom to decide what you want to engage in. You can move pain outside yourself by your will power.

Your mind is very flexible and creative. Ideas flow into your head and you are able to process them. It all seems at first as if, this is a great achievement. However, in the course of time, these

mental powers and success do not seem to be ultimately very important. This becomes apparent as it dawns on you that you can be a witness to yourself; that there is an infinite source outside the regular yourself (though this witness is a part of you). You can meditate and watch your thoughts: you are transcendent and immanent, at the same time.

This transcendence is a great feeling; it does not obey rules of time and space. It has limitless capacity, and does not require energy. The person is the focus — the witness is your own self, not a part of anything else. In this stage, you have the power of operating without being operated. In this stage, you can be and not be yourself both at the same time, act a role outside as needed, but stay away from it, and stay your true self. For example, if a situation calls for raising a voice you can do so without being angry at all (you can witness yourself, without being involved).

As the fourth phase emerges, the source of thoughts and its objects no longer seem enough. There is an origin to this infinite stream, which is the source of thoughts. Another centre is discovered, its abode is in the centre of the body, which is the source of all things, thoughts, feelings, and senses. It creates the 'guts feeling', combining feeling together with concrete clear knowledge. It is a dualistic phenomenon composed of the subjective 'me', and the infinite 'me' representing an unexpressed absolute.

It seems this centre point is defining the real me. It is the untouched centre of the storm, from which all energies emerge. This point is the absolute, which no word can touch and where no training is needed. It is there, and we just have to be aware of it.

There is emptiness and fullness at the same time, without a contradiction. Here, within this dualism lies the source of everything in me. There is a certain relief now in finding this 'empty' absolute, the point of source, where the root of the answers to all my questions exist. When meditating, one should meditate on emptiness and this absolute will emerge.

Yet the unsolved mystery still exists, which is the relationship between oneself and the universe (including all others). Finally, I entered into the fifth phase, the last one in my personal experience.

In this stage, a revelation occurred in two directions. First, there was the connection of the absolute with all other absolutes, and then, there was the projection of the absolute to my infinite will. The latter, in turn, is connected by contraction and projection to earthly mode, the worldly events. This means that whenever something happens here, it has finite magnitude and dimensions. Since it reflects the infinity, it has to be contracted to finiteness and then only some dimensions (and in finite size) will reveal and participate in a certain worldly action. In resonance tuning one can feel the infinity moving bottom up.

Thus, I now understand the process as coming from one source, divided into absolutes, each of them generates infinite possibilities. This inherent infinity, in turn, is contracted to events that are happening and projected so that it can be useful to whatever is occurring. By experiencing this process with flexibility, one can thus see the bigger picture and the many possibilities in any instance.

Now, I can also distinguish for myself, right from wrong, true from false, etc. This means that this projection has several forms, but everything is not included. This capability is sometimes called intuition and extends to evaluating other people's behaviour, determining their integrity and genuineness. Unfortunately, this phase does not always last, and one gets in and out of it.

In this phase, 'religious' feelings sometimes arose in the sense that the process I experienced seemed to me to be, in the micro, very much similar to the process of creating the universe. It occurred to me in this phase that the Big Bang that started from an infinite eruption of an undefined source, which crystallized into the universe, is similar (though in reverse) to the process I had undergone. This made a lot of sense to me and offered some sort of reassurance.

In the third and fourth phases, a detachment from the world prevails. This disconnection is sought after; worldly issues seem to be of no importance. In the fifth phase, a return to the world occurs and a full grasp of life, unity with the world, joy, love, and freedom with compassion is attained.

There are many untold details in this short description. In particular, the process is not always 'nice'. It has ups and downs, pitfalls and peaks, dynamics of constructing and demolishing of two kinds: inside oneself and with respect to one's environment. The process is not linear, there is movement among the phases and there is the possibility of being in one phase as well as in another, if only partially.

The internal events are sometimes so overwhelming that they cannot be easily expressed (so I have included some poems here). The important thing is to be aware of any event, while balancing the infinity and its dynamic contraction and projection, with living in the moment in natural tuning, awareness and joy. That happens in the last phase.

Having this understanding makes one very flexible and creative. Since you can draw upon an infinite source the resources needed to focus on a certain task, the range of possible tasks that one can undertake is much greater. You are less confined to the stereotype, your background and career dictate others. There is a natural sense of freedom and ability, without tension and intensity. Attachment seems unnecessary, as there is always enough and things are understood in proportion.

Your experiences will provide anecdotes for people who do not know you. For these persons you must appear in the role in which they perceive you — a professor of engineering mathematics, an army commander, etc. On the other hand, there are many others who will appreciate your journey and will feel comfortable with you, looking up to your words and deeds. But most importantly, you will feel comfortable with yourself, with the sense of wholeness and well-being, with your individuality and yet unity with the whole.

To conclude the description of these phases: in the first phase, there is the taste, the spark that ignites; in the second phase, all is immanent (inside) but clear and rich (new colours, voices etc.); in the third phase, transcendent (infinity) is found (beyond time and space). Duality is discovered in the fourth phase, (the empty source of all, beyond infinity); while unification and compassion arise in

the fifth phase, with projection to here and now (thus closing the circle, coming from a different point of view to similar things that were in life before).

Isha Upanishad (verse 7)

When to a man who understands,
the Self has become all things,
what sorrow, what trouble
can there be to him
who once beheld that unity?

Translated by F. Max Müller
(Hindu tradition)

Finally

As a final remark, I would like to say that it is extremely difficult and often inconvenient to express the deep personal experiences that I have undergone, in words, particularly in a report like this (especially, to an anonymous reader, who may not be ready). The experience can be more easily expressed through music, dance, art, etc., where everyone understands and experiences according to his situation. Words impose limits (but still it is our unique tool). They are inadequate for the sense of infinity that I would like to express. True expression of my experiences and the states they describe can be done by paradox, which enables one to express a level beyond what is here, thus linking and spanning infinity (because paradoxes are most logical).

Poetry is another worthy expression, if words have to be used. Poetry has an immediate impact on the heart and the mind. I am not referring to any poetry, but sacred texts and some poems that present infiniteness and connectedness of the incarnation on earth, which directly touch the heart, shake the mind and alter thought patterns (but a person has to be already in some level in order to be impacted).

To enable the reader to connect to an experience of the sort that I have been describing, I offer another wonderful poem:

What is this Awesome Mystery?

What is this awesome mystery
that is taking place within me?
I can find no words to express it;
my poor hand is unable to capture it
in describing the praise and glory that belong
to the One who is above all praise,
and who transcends every word...
My intellect sees what has happened,
but it cannot explain it.
It can see, and wishes to explain,
but can find no word that will suffice;
for what it sees is invisible and entirely formless,
simple, completely uncompounded,
unbounded in its awesome greatness.
What I have seen is the totality recapitulated as one,
received not in essence but by participation.
Just as if you lit a flame from a flame,
it is the whole flame you receive.

Symeon the New Theologian (949 - 1032)
Translated by John Anthony McGuckin
(Eastern Orthodox Christian tradition)

This concludes my brief narrative. It represents just a tiny drop of my experiences. Now you, the reader, please start creating for yourself an inner space by sitting or walking in silence for a while and just observing and absorbing the beauty of yourself, others and the nature. When you get up early in the morning, before starting the day allow yourself a few moments of relaxed quietness (not thinking of the day ahead, but 'just' connecting to the source).

The experience of deep consciousness will take you in a full circle. This means that after seeing and experiencing it all, you can continue your appropriate work and daily life, but now as a free, knowledgeable, happier person.

As a final note — the nature of deep consciousness experience is such that all cannot e revealed, especially not in such an open manner as writing. Frequently, more can be discussed in intimate conversations. Something, however, is always kept for themselves, those who have the experience.

I follow Rambam, the leading Jewish theologian, philosopher and mystic and say :

"Thy glory is in silence."

THIRD ACADEMIC SESSION

13 January 2006

Experiences and Experiments in Spiritual Consciousness

SWAMI SACHIDANANDA BHARATHI, DCP

Introduction

The International Workshop-cum-Seminar on *Conciousness: A Deeper Scientific Search* being organised from 12 to 16 January 2006 by The Ramakrishna Mission Institute of Culture, Kolkata, is of great importance in the present juncture in human history. The world today is searching desperately for a new hope. The old order built on a mechanistic Newtonian-Cartesian worldview is crumbling under its own weight. A new order based on an ecological holistic worldview is gradually emerging for humankind. Humanity seems to be poised for a 'millennium leap' forward into a new mode of existence based on an integral vision of life and reality.

I am grateful to Swami Prabhanandaji for inviting me to share some of my insights, experiences and experiments in 'spiritual consciousness' with the participants of this International Seminar.

My 'pilgrimage of faith' began with an encounter with death in an air crash in 1982. I was serving as an Indian Air Force Officer at that time. This traumatic experience opened 'the inner eye' of my mind into a new realm of existence unknown to me before. I encountered the 'Cosmic Christ' on the way and became a 'Disciple of Christ for Peace' (DCP). Poojya Swami Ranganathanandaji, the former President of the Ramakrishna Mission, who entered his Mahasamadhi on 25 April 2005, was a guide and *guru* to me in my spiritual journey. He helped me in developing an 'Indian Face of the Christian Faith' without religious conversion and cultural alienation which are the two major factors that kept Christ and Christianity alien to this land of religions.

I was born and brought up in a Syrian Catholic family in Kerala. However, I could not accept the ways of the westernised Christian churches that held India and India's rich spiritual and cultural traditions in low esteem. I have been grateful to God for giving me birth in India. I have also been proud of being an Indian. Perhaps that was one of the factors that motivated me to join the Indian Air Force. But today, I see things quite differently. I have come to accept the truths that the whole world is but one family and humankind is bound with a common destiny.

I believe that an 'Unbound Christ' and an 'Inclusive Christianity' are the two historic imperatives for the 'Gospel of Love and Peace' of Lord Jesus Christ to serve its purpose in India. The spiritual hospitality of India, especially the religious harmony preached by Sri Ramakrishna Paramahamsa, can help Christianity to outgrow its sectarian and exclusive approach and to include the various denominational churches and all other religions of the world in its loving fold. It was Poojya Swami Ranganathanandaji who helped me develop such a vision and to give it practical expressions through the Dharma Bharathi Mission (DBM) and the National Regeneration Movement (NRM) initiated by me in the multi-religious context of India. I have also recently published a book titled *'A Vision and a Mission for the Third Millennium'* in which I have tried to outline a new vision of Christianity and a new school of thought based on an integral vision of life and reality. This book serves as a 'source material' for NRM and DBM.

What I share here in this 'paper' are insights derived from my experiences and experiments over the last twenty-three years. Life took a new turn for me ever since my encounter with death in the air crash in 1982. A number of spiritual experiences thereafter opened my consciousness to new realms of reality. I became a seeker of truth and activist of peace. Lord Jesus Christ became the source and strength of my pilgrimage of faith, thereafter. My spiritual quest has been centred on the living Spirit of Christ. Hence, the spiritual insights that I share in this paper are mostly limited to the Christian tradition. The only difference being that I have made

an 'Unbound Christ' and an 'Inclusive Christianity' as the basis of my life and spiritual quest.

Spiritual Consciousness

By the term 'spiritual consciousness', I mean here a consciousness of the essentially spiritual nature of our being. Spiritual consciousness is a 'depth experience', it makes us conscious of the deeper dimensions of life. It is an abiding inner awareness of the interconnectedness of one's own spirit (*jeevatman*) with the Supreme Spirit (*Paramatman*), of one's individual self with the Universal Self, God. It is also a cosmic awareness of *'One in All – All in One'*. Spiritual consciousness enables us to see the 'spirit of things'. We will learn to look beyond and behind the surface reality. Transcending the normal mental consciousness, we will be able to behold the eternal behind the temporal, the unchanging reality behind the changing situations.

Human beings are body-mind-spirit entities. It is in the human person that matter becomes conscious and the spirit displays its divine potential. Hence, the purpose of human life is to serve as a conduit and catalyst for the spiritualization of the material world. This awareness of one's divine responsibility to help in the spiritualization of the material world is the characteristic quality of a person who has developed real spiritual consciousness. Love is the root and selfless service is the fruit of spiritual consciousness.

Ways of Developing Spiritual Consciousness

Spiritual consciousness can be developed through different ways. For some people, this awareness of the inter-relatedness of the human and the Divine is 'given'. For some others, it comes through devotion. For some, it may be developed through selfless service. Love and compassion as well as peace and harmony are tangible characteristics of developed spiritual consciousness. There are also others who develop this awareness through meditation. Meditation is the most effective *sadhana* (spiritual exercise) for developing spiritual consciousness. Peace, freedom and joy of spirit can be experienced through meditation. These are the *siddhis* (spiritual fruits) of meditation. Meditation opens up our

consciousness to the power and wisdom of God. Over the years of my experiments in developing spiritual consciousness, I have also developed a kind of meditation termed Shanthi Yajna Meditation for this purpose.

Shanthi Yajna Meditation is a simple form of meditation for reconciliation and peace. There are essentially four stages in Shanthi Yajna Meditation; the stage of surrender, the stage of forgiveness, the stage of gratitude, and the stage of peace. Forgiveness and reconciliation are preconditions for peace. They are also the basic requirements for grace to take root and bear fruit in our lives. It is here one experiences the uniqueness of Lord Jesus Christ. The spirit of forgiveness and reconciliation is given to humanity by an ever compassionate God in, with and through Lord Jesus Christ. That is why Jesus Christ is also referred to the 'first born' of God. Without the spirit of forgiveness and reconciliation, other virtues cannot be developed. Shanthi Yajna Meditation is the first 'Indian Christian Meditation' that enables one to develop spiritual consciousness through Christ-consciousness.

Spiritual consciousness can first dawn upon some people also through certain traumatic or tragic experiences. But, in all these cases, divine grace plays the most important role in developing spiritual consciousness. Hence, spiritual consciousness can be developed best through ways that can help us grow in divine grace. Repentance and forgiveness are basic requirements for a grace-filled life.

Stages of Spiritual Consciousness

Human personality consists of body, mind and spirit. Together they form one entity, the human person. Our bodies and our minds have time-space limitations. But, the human spirit is beyond the limitations of time and space. This awareness of the immortality of the human spirit opens our hearts and minds to a transcendent reality that is ever at work in, with and through us. We become conscious of the fact that there is a 'higher self' working within us, guiding our lives. This awareness can be taken as the first stage in our quest for developing spiritual consciousness.

Once our 'inner eye' is opened to the transcendent reality, we gradually become more and more aware of the interconnectedness of the human spirit and the Supreme Spirit. Our spiritual consciousness deepens and we develop a devotional approach to the Supreme Spirit, God. We tend to see God with names and forms, and with attributes. We become devotees and *bhaktas* of this personal Lord, *Ishta Deva.* This can be seen as the second stage in developing spiritual consciousness.

The spiritual consciousness blossoms to its full potential when the *jeevatman* and the *Paramatman*, the human spirit and the Supreme Spirit, the individual self and the Universal Self, enter into deep communion of love. This is the flowering of our spiritual consciousness. This is the stage when we become truly 'liberated souls', *jeevanmuktas*. We see all in one and one in all at this stage. This is also a stage of the 'mystic'. We become one with the whole. This stage can be seen as the ultimate destiny, the final goal, of human life in this world. An 'Earth-family consciousness' (the consciousness that the planet Earth is the 'mother' to all living beings inhabiting it and hence all are brothers and sisters to each other) is a visible and an experiential aspect of a fully developed spiritual consciousness.

Blocks in the Path

There are certain difficulties that one has to encounter in one's quest for developing spiritual consciousness. Most of these difficulties are found within one's own being. According to our Indian tradition, there are six enemies of spiritual growth that are ever at work within us. They are referred to as *shadvairis. Shad* means six. *Vairis* means enemies. They are – *kama, krodha, moha, lobha, mada, matsarya* (lust, anger, greed, avarice, sloth and jealousy). The Christian tradition speaks about 'original sin' that is inherent in human nature. There is also the power of evil that is ever at work in our lives.

'There is so much of goodness in the worst of us and so much of evil in the best of us' is an old adage with much spiritual wisdom. One has to be constantly aware of one's own

inadequacies and limitations, and develop great humility in spiritual quest. Just as water can flow only to lower levels, grace can enter only into humble hearts.

Selfish attachments, fear, and lack of forgiveness are found to be three major blocks in the path of developing spiritual consciousness. A selfish individual, who is attached to persons and things cannot grow much spiritually, because he is always clinging on to a physical consciousness or to an ego consciousness. Letting go of the 'smaller truths' for the sake of the higher ones is a basic requirement for growth in spiritual consciousness. Similarly, a person who is afraid of 'taking the plunge' cannot go far in spiritual life. Also, repentance and forgiveness are preconditions for reconciliation without which one cannot grow much in spiritual consciousness. Thus, selflessness, fearlessness and forgiveness constitute the trinitarian foundation of spiritual consciousness.

Spiritual Liberation

Consciousness expands to the degree up to which we can reduce our ego and selfishness. As we die to our own little selves we become more and more capable of loving others. With growth in love, we also grow in consciousness. Love is also the dynamic force behind spiritual consciousness. That is why spirituality is often identified with one's capacity to love. God, the Supreme Spirit is Love Infinite. It is from the Infinite Love of the Supreme Spirit that the individual spirit draws its ability to love. True love is forgiving, enduring and self-sacrificing. I have termed such love as *sahana yoga*. The word *sahana* means to suffer. *Yoga* here implies communion with God. *Sahana* becomes *yoga* in, with and through love.

Sahana yoga is the path of liberation. It is the path of unity. It is also the path of lasting peace (*Sahana yoga mukti marga, sahana yoga aikya marga, sahana yoga shanthi marga*). These are the three eternal laws of spirit demonstrated and taught to humankind by Sadguru Jesus Christ. All saints and saints of humanity uphold and live by these laws, irrespective of their religious and cultural backgrounds. These are also spiritual laws

that anyone can test in their individual or collective life. Mahatma Gandhi and Martin Luther King, in the recent times, made use of these laws in their struggles for social liberation.

Liberative social action can be taken up only by liberated people. Lord Jesus Christ liberates one from the forces of evil ever at work within oneself and within the world. He conquered death himself, and empowers his disciples also to conquer death and become *jeevanmuktas*. One hears an 'inner call' to dedicate oneself for a higher cause.

It was this 'inner call' which came to me after encountering Christ in my life, that motivated me to launch the 'National Regeneration Movement' (NRM) during the Golden Jubilee of Indian Independence. NRM has its genesis in an inter-religious programme termed 'Desh Vandana- 97' which was inaugurated by my revered guru, Poojya Swami Ranaganathanandaji Maharaj on 14th Aug 1997, at Hyderabad.

NRM is now being developed into a 'Second Freedom Struggle' for the economic, social and moral freedoms of India as envisaged by Mahatma Gandhi. 'Peace and Value Education' is its core component. Teachers, parents and students constitute the focus groups of NRM.

'Dharma Bharathi Mission' was initiated in 2003 to provide organisational support and leadership to NRM. A Dharma Bharathi Ashram was also established in 2003 as a spiritual orientation centre for NRM and Dharma Bharathi Mission.

NRM aims to transform India into a *Bharatiya Dharma Rajya* of peace and spirituality based on an integral vision of life and reality. India has always been identified as a land of peace and spirituality from time immemorial. India's divine mission lies in the direction of peace and spirituality. But, in the recent centuries, India has lost touch with her divine call and is now enslaved by forces of darkness.

I believe that the real crises facing the nation today is not economic and political, but moral and spiritual. A moral regeneration and spiritual revitalisation of India is a historic necessity not only

for this land of religions, but also for the whole human race to develop a culture of peace and spirituality. The National Regeneration Movement and the Dharma Bharathi Mission are efforts in this direction inspired by my own spiritual experience and experiments as a disciple of Christ for peace.

Meditation and Spiritual Consciousness

Before I conclude, I wish to stress the importance of meditation in developing and deepening spiritual consciousness. Meditation is a *sadhana* (spiritual technique) developed in the East, especially India, for spiritual growth, mental peace and better health. Meditation in its real sense is 'silent surrender'. It requires inner silence and stillness of mind. 'Be still, and know that I am God' is a Biblical revelation that stresses the importance of inner silence and stillness of mind in our quest for developing spiritual consciousness that will ultimately lead us to God-realisation.

There are many kinds of meditations. Zen, Vipassana, TM, Patanjali, and Raja Yoga are kinds of meditation which are well known for their effectiveness. There are also other modern kinds of meditation which are becoming more popular these days, like the ones promoted by masters like John Main, Osho and Sri Sri Ravi Shankar. Each kind of meditation has its uniqueness. Each is aimed at a particular effect.

The biggest hurdle I encountered with in my spiritual journey was my guilt-conscious nature burdened with my past 'sinfulness'. I was a 'worldly man' running after 'worldly pleasures'. As a young Air Force Officer, I was much attracted to the 'good things' of life. I had even gained a nickname, 'Prince John' because of my overindulgent life style. I was also a deeply 'wounded' person within myself. I was full of anger and resentment. The *shadvairis* filled my being. Various kinds of prayers, meditations and *sadhanas*, dedicated social service etc. could not help me find the inner freedom, healing and wholeness that I was searching for. In utter despair, I cried out to God for help.

During one of those painful days, I had my first experience of the 'healing touch' of God. I was given an insight into the

importance of 'surrender' in my quest for lasting peace and happiness. I also realised the necessity for repentance, forgiveness and reconciliation in my spiritual life. It was at such a stage that I encountered Lord Jesus Christ in a personal way for the first time. I came to realize that for ordinary people like me, God in His infinite love has given His power and wisdom as well as His truth and grace in, with and through His Son, Lord Jesus Christ. I accepted this divine gift into my life with joy and gratitude. This was the beginning of a new life for me. I offered myself to God as a disciple of Christ for peace in the world. The Shanthi Yajna Meditation that I practise and teach is a fruit of my discipleship to Lord Jesus Christ, the Prince of Peace and Son of God.

As the term implies, Shanthi Yajna Meditation is a meditation for peace. In this meditation forgiveness and reconciliation have very important roles to play. Shanthi Yajna Meditation is centred on the spirit of forgiveness that God offers to humanity through Lord Jesus Christ. There is no religious conversion or cultural alienation implied in this approach. It brings to us the 'grace and truth of God' irrespective of our religious and cultural backgrounds. It enables us to experience the 'peace of Christ' which is 'beyond human understanding'. This experience will, in turn, deepen our spiritual consciousness. Thus, Shanthi Yajna Meditation is a meditation for developing and deepening one's spiritual consciousness.

Conclusion

In this paper, I have tried to present some of my important insights with regard to spiritual consciousness, stages of its growth, blocks on the way, process of spiritual liberation, and the importance of meditation in developing spiritual consciousness. Spiritual consciousness demands of us a total self-surrender to the Universal Self, God. A perfect model of this self-surrender is Lord Jesus Christ, who surrendered his whole life to God the Father, unreservedly. Following the example of Sadguru Jesus Christ, anyone can come to an experience of the abiding peace and abundant life that God offers to humanity.

The world today urgently needs a spirituality of love and peace more than ever before. Developing and promoting such a spirituality is a historic imperative for peace and happiness on earth. India has a divine responsibility to discharge in this mission. She has to take upon herself the task of helping to usher in a civilization of love and culture of peace in the world rooted deep in a spiritual consciousness. Spiritually inclined people from all religious traditions have their unique roles to play and contributions to make in this task of the era.

The Ramakrishna Mission, by virtue of the harmony of religions that it preaches, has an important role to play in developing and promoting a spiritual consciousness that can provide a strong spiritual foundation for India in fulfilling her *Yuga Dharma*. May this International Seminar become a catalyst and inspiration in our quest for lasting peace and happiness in the world. This is my prayer and my hope. May God bless us.

Revelation of Consciousness in the Experience of Indian Sages

MM Govinda Gopal Mukhopadhyaya

In India, that which sustains the entire creation as well as all living beings is termed '*dharma*'. It is wrongly translated into English as 'religion'. Religion is an intellectual belief adhered to by all human beings in all parts of the globe, which has its roots in the adoration of some prophet, like Jesus Christ, Mohammad, Buddha, Jina and others and adherence to their teachings.

India's age-old spiritual outlook is based on the *Vedas*, which literally means knowledge or experience and is believed to be impersonal (*apauruṣeya*). This may appear as queer and dogmatic to the modern mind but what is conveyed by this term '*apauruṣeya*' is the fact that there is no individual bias or limitation to all that appears in these verses of the *Vedas* but they are all universal and eternal truths, realized by the 'seers' (*ṛṣis*) who have seen, perceived or realized them, not through their minds or thoughts but their very beings or souls.

This touch of the soul or inmost being is what we always seek in India, when we pursue spiritual things. This is conveyed by the great Samkaracarya, in his commentary on the *Brahmasūtra*, when he affirms that this *Brahmajnāna* (knowledge of Brahman) has its end or fulfilment in experience of a real object (*anubhavāvasanatvāt bhūtavastuviṣayatvāt ca brahmajnānasya).*

Similarly, in the *Yogasūtra* of Patanjali, emphasis has been laid on this *viśeṣa*, the particular, which must be seen, realized (*avaśyam kaścid viśeṣaḥ pratyakṣīkartavyaḥ*), because only then we may be sure that we are moving on the right track, and ultimately attain *Kaivalya* or utter freedom. This *viśeṣa* may be *śabda, sparśa, rūpa, rasa, gandha*, i.e, all sensual experiences now turned divine (*divya*), i.e., extra-sensory.

I was fortunate enough to come in close contact with some of such illumined souls, from whose lips I had the privilege to hear directly how they pierced the veil of matter and gained an easy and normal access to the sphere of the spirit.

1. Acharya Satishchandra Mukhopadhyaya
2. Pramathanath Mukhopadhyaya (Pratyagatmananda Sarasvati)
3. Gopinath Kaviraj
4. Sri Krishna Prem
5. Anandamayee Ma

I
Acharya Satishchandra Mukhopadhyaya

Of the five great realized souls I had the privilege and good fortune to meet and hear from their lips directly the account of their realization, the first and foremost in seniority and self-effacement was Acharya Satishchandra Mukhopadhyaya, whose name is otherwise quite well known as an educationist, the pioneer founder of the National Council of Education (Jatiya Śikṣā Pariṣad), from which later on grew up the present Jadavpur University.

As was his wont, Satishchandra always used to keep himself in the background and shunned the limelight of publicity. He was a class-mate of Narendranath Dutta, who later became Swami Vivekananda, after coming in close contact with Sri Ramakrishna.

Satishchandra also had a religious temperament but he never wanted to seek a '*guru*' or teacher or initiator on his own. He stood by this firm belief that it was for the *guru* to pick one up and not for the *śiṣya* or disciple to find him out. And, it so happened that one day a disciple of Prabhu Vijayakrishna Goswami, a great religious teacher and guide of the time, came to Satishchandra to

inform him that next morning Satishchandra would be initiated by Shri Vijayakrishna and he should go to him early in the morning.

Satishchandra was aghast and spent almost a sleepless night, as he could not decide what to do next morning. But believe it or not, he told me that he was made to leave his bed at 4.30 a.m. and take a bath almost unconsciously, change his clothes and then take the road to his *guru's* place. On his return, he found his wet clothes lying in his bathroom and only then remembered that he had taken his bath.

On reaching his *guru's* place, he came across a monk, who enquired if he had come for initiation. He just nodded an assent and went upstairs and found Goswami, his future *guru* waiting for him, with two *āsanas* (small sitting mats) spread side by side. He was asked to sit on one of them and just sitting beside him on the other, Vijayakrishna made him hear the *mantra* from his lips. Immediately, he lost all his outer consciousness and was lost in divine ecstasy. After a brief while, he came back to his normal consciousness and found his *guru* smiling at him. To the *guru* he complained why he had been brought down from that highest heaven of absolute delight. The *guru* smilingly assured him that he had just been given a slight taste of that supreme delight, which would be his permanent state of being, later on.

After his initiation, Satishchandra was allowed to carry on his educational pursuits with usual vigour, founding a society, called the Dawn Society, bringing out a journal called the 'Dawn', running a school of Sanskrit called 'Bhāgavat Chatuṣpathī' and so on. But after sometime, Guru Vijayakrishna suddenly asked him to leave everything and move straight to Varanasi and on going there he was strictly enjoined not to go to any ashrama, which abounds there but live entirely on his own, hiring a house, eating his own food but without any subsistence of his own, looking only to the heavens ! This is called *ākashavṛtti*, living on the vacuum, as it were. He had many devoted students, whom he had brought up with great care and who had later on become well-established in life, like Sir Atul Chatterjee, who rose to become the first Indian

to adorn the post of the High Commissioner in London for India. But Satishchandra was enjoined neither to seek any help from any of his students or admirers nor let any one of them know about his want.

Satishchandra narrated to me how on reaching Varanasi he felt that he had lived there for long, recognized the temple of Annapurna but could not recognize that of Lord Visvanath or Siva, as the old temple happened to be demolished during the Muslim rule. He remembered how he had lived there for long as a '*sannyasin*' or mendicant in life after life on the banks of the Ganga but could not get the cherished goal of liberation or utter freedom because of his vanity or ego of being a '*sannyāsin*', a renouncer of all possessions whatsoever.

This time his motto became: "Ask nothing, give everything." Having completely forsaken all possessions and attachments and even laying down the sense of forsaking, Satishchandra lived only looking up to his own guru, who was constantly guiding him and had taken all his charge. In this way, he spent the remaining part of his long life of forty years or so in Varanasi, almost incognito and his self-effacement was so perfect and complete that when he passed away, it became difficult to collect four men to carry his body to the funeral pyre.

The co-disciples of Satishchandra, initiated by Vijayakrishna, used to come and visit him to elicit from him the secret of his living. He told me that they used to come to enquire as to what particular *mantra* had been given to him, through the power of which so much money flowed to him of itself and he did not have to bother at all about his own subsistence!

He used to send the entire amount of money to his *guru's* Ashram at Puri, keeping a small fraction for offering *'bhoga'* daily to his *guru* at his own place and used to take a small part thereof as *prasāda* or gift from him for his own subsistence.

Though unknown to the general public, Satishchandra could not hide his greatness, at least, from one of the greatest figures of India, Mahatma Gandhi, who, having lost touch with him for a long time, had earlier presumed that he had gone to eternal rest.

Now, Gandhiji wrote to him from Noakhali, where he was staying at that time, to quell the communal riots, thus: "May you attain the full span of a hundred and twenty-five years, which I may not attain for lack of equanimity, prescribed for it in the Gita, our Kāmadhenu."

II
Pramathanath Mukhopadhyaya

Acharya Pramathanath Mukhopadhyaya, who later took the life of a *sannyasin* and came to be known as Swami Pratyagātmānanda Sarasvatī happened to be a colleague of Satishchandra in the National Council of Education and also taught for some time at the then Ripon College, now known as Surendranath College, as a teacher of Philosophy, Sanskrit and English for his versatile talent in all these subjects. Later in life, he came in contact with Sir John Woodroffe, who took the pseudonym of Arthur Avalon and made the *Tantras* well-known all over the world by his priceless contributions in this field. Sir John, who happened to be a Judge of the Calcutta High Court, respectfully referred to Professor Pramathanath in his books for his luminous elucidation of the Tantrik philosophy.

Satishchandra had everything from his guru, Shri Vijayakrishna Goswami, who was the be-all and end-all of his entire life. Contrary to Satishchandra, Pramathanath had no outer *guru* or teacher, from whom he could get the inspiration or initiation. It came on itself from his own inner being, when he was in his teens, as a spot of light between his eyebrows. He had no knowledge about its significance. The only outer significance to this teen-aged boy was the flow of Sanskrit verses, which came on itself, without any conscious effort on his part.

His schooling and education marked him out as an extra-ordinary genius. He was at home both in the sciences and arts to the amazement of all. Ramendrasundar Trivedi, a distinguished educationist of the time, who had a keen eye for talents, immediately appointed him as a teacher in the Ripon College and whenever any teacher happened to be absent, he would requisition the

services of this young polymath, who could teach with ease any subject that happened to be allotted to him.

The Calcutta University also invited him to deliver special lectures on religion and philosophy and in almost all of them he would make a synthesis between Western science and ancient Indian religion. His lectures, later published in books bear the titles of '*Veda o Vijnāna*' and '*Purāna o Vijnāna*' show how he tried to synthesize Eastern and Western thoughts in his own unique way.

All these were, however, only a fringe of his intellectual developments, which had their roots in his intuitive apprehension of the age-old wisdom of India, stored in the *Vedas*, *Tantras* as well as the *Gita*, *Upanisads* and other spiritual literatures. The inner eye, which manifested outwardly as a spot of light between the eyebrows in his childhood, had its full blaze in the closing years of his long unique life of more than ninety years. He started writing, in Sanskrit, verses in a compendium on the science of *Japa*, which is universally pursued by all sects to whatever school, *śaiva*, *śākta*, *vaiṣṇava* or others they may belong. He looked upon this book as a revelation and not as a composition of his own. He used to worship this book as a gift from the Divine and held it reverentially on his head, whenever he moved from one place to another.

Like the *Brahmasūtra*, it is comprised of four chapters with four *pādas* or sections in each. The *sūtras* or aphorisms are followed by explicatory Sanskrit verses or *kārikas*, which again, are explained exhaustively in lucid Bengali prose. The entire volume in six parts cover more than two thousand pages.

There is a small history behind this unique composition. Pramathanath, after taking *sannyāsa* or renouncing his name and form, became Swami Pratyagātmānanda Sarasvatī, all on his own, without going to any outer *guru* for formal initiation into *sannyasa* or the life of a mendicant. He gave up touching all money to signify truly that he had no possession of his own, as it should be for a true *sannyasin*. This utter forsaking of all touch with money used to lead to much complications, especially when he moved from

one place to another. Someone used to purchase a ticket for him and handing it over to him, put him in the train and left, with the instruction to somebody living at the place of his destination to receive him, especially to pay the fare of the coolie, who would have to be engaged to carry his luggage.

The Swami used to come to Baidyanath-Deoghar occasionally to see and meet my revered father, Prangopal Mukherjee, whom he used to look upon as his elder brother, my uncle being his classmate and close friend. Here at Deoghar, he had the occasion to meet our guru, Srimad Balananda Brahmachari, who had given the hint to him graciously to take *sannyāsa* and so he used to look upon him as his own *guru*. In five beautiful verses composed in Sanskrit, the Swami offered his obeisance to him, incidentally unfolding the real nature and significance of the *guru*.

Now, during one of his visits to Deoghar, the Swami, just before the day he left for Calcutta, had the occasion to participate in a discussion on the Śamkara-bhāṣya of Taittiriya-Upaniṣad, where the topic of *manasa-japa* came in. Somehow or other, the topic went deep into the heart of the Swami and he lovingly made me the recipient of his luminous thoughts thereon, first through a few lines in a postcard and thereon, one after another, the volumes grew, through longer and longer letters, which became the basis or nucleus of his *Japasūtram*, which finally took the form of six big volumes, running to more than two thousand pages.

That all these writings were not his conscious personal compositions, he was aware of all through. It came from above, as it were, he being only the recipient thereof and this was proved time and again. Once when I was working at Krishnanagar College, as a Sanskrit teacher, he sent me there a verse in Sanskrit which had come to him recently but he could not make out if the verb-form contained in it had any basis in Sanskrit grammar. I searched for it thoroughly so far as my knowledge goes and I also consulted a senior veteran Sanskrit teacher working with me, and he also concurred with me that there was no such verb or verb-form in Panini's Sanskrit grammar. And lo! after a couple of days, he

came hurriedly to me to say that there was such a verb in Panini and I passed on the information to Swamiji to set his doubt to rest.

All this gave me an inkling to what '*apauruṣeya*' or impersonal writing actually meant. It was inspired, not constructed consciously by the mind or the intellect. What Bergson, the Western philosopher calls intuition, as distinct from intellect, comes close to it. While the intellectual squirrel moves round the object, the intuition enters into it, as stated by Bergson beautifully to distinguish between the two. Here, the word is made flesh, as it were, and takes a living form.

The end of this great Swami's life was all the more revealing and astonishing. I had been away to the South during the Puja holidays in October. On my return to Burdwan, when the morning news on the radio was on I was sipping my tea. I suddenly had a rude shock on hearing the announcement of the passing away of the Swami. I was looking forward to go to Calcutta and meet him to give an account of my experiences in the South as well as to request him once again to write out the verse in Sanskrit about my revered father, which he had promised, time and again, whenever he pressed me to publish my father's writings, which he never made public. To my father, it was all for self-understanding and self-revelation and not for public consumption. The Swami, who was aware of the immense value of my father's observations on the sacred scriptures, like the *Gītā*, the *Upaniṣads*, the *Bhāgavata* and so on, would request me, time and again, to publish them, as he had now passed away and in return, I would go on requesting him to write out the Sanskrit verse about him, which he had promised long ago, as I wanted to put it as an introduction to the proposed publication.

The next day after the radio announcement of his passing away, I was to go to Baidyanath-Deoghar to see my ailing elder brother, Gourgopal to report about my journey to the South. On reaching there, as soon as I entered his room, he blurted out: "I was just thinking how and where to send this letter of Swamiji, as I did not know anything about your whereabouts." In utter amazement and

bewilderment, I put to him this question: "Which Swamiji you are talking about? He has passed away since." To this, my brother said: "I know, but just before his death, he had this letter posted to my address, as he was not aware of your whereabouts."

Inside the envelope, I found a most beautiful Sanskrit verse, along with a Bengali poetical version thereof, describing the innate sublime character of my revered father. On coming back to Calcutta, I learnt that the Swami had insisted that it must be posted that very day, though his attendants and devotees were reluctant to do so, as they all assured him that Govinda Babu would be coming himself in a few days and the letter could be delivered by the Swami himself to him directly.

And, the crowning wonder of this last and final episode lies in the fact that the Swamiji had put the date inside his letter as the date of his demise, which was to follow a day later! Did he knowingly and deliberately put this date to signify that this was his parting and final homage to one who was dearer to him than his elder brother, whom he adored and admired so much in life! Who can fathom the unfathomable mystery of these mystics, who have adorned this sacred land of India, time and again, to prove their diversity as well as timeless identity?

III
Gopinath Kaviraj

Even more astounding and unbelievable is the life-history of my most revered teacher, Gopinath Kaviraj, who, later in life, was adorned with encomiums and honorary degrees like '*Deśikottama*', '*Mahamahopadhyaya*', etc. from almost every university in India and also from the Government, for his unbelievable range of scholarship and studies in almost all branches of Sanskrit as well as philosophical studies.

Being the only one posthumous child of his widowed mother, he did not have the good fortune of seeing his father's face. He was forced to leave his hearth and home through the conspiracy

and machinations of his relatives. His poor mother somehow took him to her brother's house for asylum. There, too, severe malaria gripped him, making it almost impossible for him to pursue his studies or any sort of education.

Later on, some of the friends of his late lamented father advised him to seek his fortune in Calcutta, where many of his father's friends were well-placed in the sphere of education. One of them, the widely renowned philosopher and scholar, Sir Brajendranath Seal, took him very kindly under his protection and considering the state of his frail health, advised him to leave Bengal altogether and go to the long distant, Jaipur, where, in the Maharaja's state colleges, he would be able to get free education as well as free board and lodging.

Fate thus drove the penniless and relativeless Gopinath from his homeland in Bengal to that far-off part of Western India, from where he graduated but knew not what to do next. Fortunately, he got the protection and patronage of a foreigner, who was at that time at the helm of affairs in education in the state. He could easily detect the genius of this young student. Both, he and his devoted wife, took Gopinath under their loving care and made arrangements for his further studies and stay at the Queen's College, Varanasi. He was fortunate enough to get there as his class-mate, the later renowned Narendra Dev, who grew into a nationalist leader of repute as well as a profound scholar.

Having passed his M.A. from the Allahabad University, Gopinath was very anxious to get a job for his subsistence, but here again, Dr. Venis prevailed upon him to accept the humble post of librarian at the Saraswati Bhavan of Queen's College, Varanasi. It seems as if the doors of the temple of Saraswati were now flung open before Gopinath.

Varanasi was, as it were, the destined permanent abode of Gopinath, as people used to look upon him, later in life, as the '*Sachala Visvanath*' or the moving Siva Himself in a human form, for his profound knowledge, almost amounting to omniscience. Here again, in Varanasi itself, Gopinath had his second birth

through the initiation from his spiritual guide, Visuddhananda Paramahamsa, whose amazing spiritual power was beyond the reach of all human comprehension. The *guru* was commonly known as 'Gandha Baba' for his incomprehensible power of producing any aroma or perfume as demanded or asked for. He did not attribute all this to any miraculous power that he possessed, but explained those to be the Science of the Sun or '*surya-vijnana.* The *Surya* is adhered in the Vedic tradition as the One God, the Supreme Self (*ekaiva devata mahan atma, surya itya' caksate).*

Varanasi was thus the appointed place for Dr. Kaviraj, where not only he found his *guru*, who gave him his second birth but also had the exceptionally good fortune of coming in contact with a very profound and enlightened soul in the person of Siva-Rama-Kinkara-Yogatrayananda, as he called himself, though his family name happened to be Shashibhusan Sanyal, to whom flocked Swami Vivekananda, Swami Abhedananda and other spiritual seekers for enlightenment and knowledge. Gopinath was also very close and devoted to Sir Brajendranath Seal, the most eminent philosopher and profoundly learned man of the time, as already indicated.

Gopinath used to seek enlightenment from all to resolve his doubts about spiritual and philosophical matters. Once he approached Sir Brajendranath with a query about Sri Aurobindo (who was then only Arabinda Ghosh, a revolutionary and patriot of eminence, just released from jail). He asked Sir Brajedranath: 'Do you, Sir, believe what Arabinda is saying that Lord Vasudeva Himself appeared before him and gave him this message?' To this, Sir Brajendranath, contrary to the expectation of Gopinath, immediately replied: 'Why should I not believe it? I tell you about a curious incident that happened the other day to me. I was frantically in search of a very valued document about my property, which I was not finding anywhere in spite of my most intensive search all over the household. I just retired with a heavy load of anxiety and tried to sleep. In my sleep, I found my departed wife appearing in a dream to allay my anxiety by telling me that I myself

had put that important document in the flap of a certain book. Next morning, on being awake, I could easily get it exactly therein.

After narrating this personal dream experience to Gopinath, Sir Brajen posed this question regarding Arabinda: 'If my late lamented wife may appear in my dream to tell me about the exact location of that most valued document and bring relief to me, why would not Lord Vasudeva communicate with Arabinda and give him important instructions to be followed by the latter?'

Gopinath was thus extending his frontiers of knowledge from all sources, by his intensive studies as well as extensive contact with spiritual learned men. By and by, through the flowering of his inner being by intense sadhana, Gopinath gained an insight on his own, which revealed the inner senses of many Vedic and other texts, which were beyond ordinary intellectual comprehension. To give an instance: one day he enquired of me if I had taken note of the fact how the Vedic texts, which I was just reading as prescribed texts for study, contained a synthetic approach to Reality, combining *karma, jnana* as well as *bhakti*. I felt aghast as to what he was driving at, for the prescribed *Vedic* texts he was referring to, was the first opening hymn of the *Rgveda*, the hymn to *Agni*, which started with *'Agni mide purohitam'*. He then admonished me: Have you not gone through the verse in this hymn, which runs thus — '*Upatvagne dive dive, dosavastar dhiyā vayam / namo bharanta emasi*'?

It, no doubt, was quite well known a verse to me but there seemed to be no trace of *jnana-karma-bhakti* in it! Then he unfolded the inner meaning in this wonderful way: '*upa-emasi,* in this verse indicated 'approaching near', which indicates *'karma'* or action. The action is to be joined with the intellect, i.e., *jnana* or knowledge, indicated by the word '*dhiya*'. Lastly, it is to be joined with *'bhakti'* or devotion, indicated by the words, '*namo bharanta*'. The three must be combined when you approach or invoke or pray to *Agni*.

Such luminous interpretations of Vedic or Sanskrit texts used to be revealed to him of their own, sometimes when he was

travelling from one place to another or while he was busy with some other work or sitting with a vacant mind. It involved no active part of his own, but was a gift of his own inner self to itself. So, he used to call all those as '*sva-samvedana*', i.e., understanding by oneself, i.e., not from any outer source whatsoever. This self-understanding or self-communication used to come to him while he was moving from one place to another or walking or sitting casually or working. In other words, it was something constant and eternal as *sui-generis*.

Dr Kaviraj was thus at once a denizen of a higher sphere of thought as well as the normal human thought. His unique and wonderful expositions of the *sastras* or Scriptures had always a flavour of their own, which happened to be unique and extra-ordinary, not to be found in any of the standard commentaries. The originality was all his own and yet not his own, as it came to him or used to be revealed to him from some supernatural source.

Before I close, I must refer to another unique characteristic of this great man which bewildered many. I mean his profound intelligence coupled with a child-like simplicity. He would accept anything, that was reported to him, as true without cancelling it outright, because he sincerely believed that truth might be there, even in the words of a child. So, without any questioning or the least doubt, he would accept totally everything from every source, which in its place made people doubt his sanity, giving the impression to many that after all he was a credulous man, in spite of all his learning. But even after accepting all that were either super-normal or abnormal, as true, he would relentlessly go on pursuing to find the actual fact or truth of the matter. There is no harm if it is found to be all bunkum or nonsense because who knows if through outright rejection of something unbelievable, one may perchance miss a supreme truth! So, he was always a man with an open mind, not rejecting anything but accepting everything for a crucial examination, if some precious fact on unknown truth might be revealed thereby. Thus, he always remained a child, supremely curious about everything, especially about something

extraordinary or miraculous, which, he hoped, may suddenly open a new frontier of knowledge.

IV
Sri Krishna Prem

Devotion or surrender is the highest ideal of a true Indian devotee or *bhakta*. I had the privilege of coming in contact with and knowing most intimately a person who happened to be a foreigner, a British by birth but surpassing all Indians or foreigners in realization and attainment. He used to regret, time and again, that he had not been able to change his white skin and so people called him a 'Sahib Sadhu' wherever he happened to go or move about in India.

His original name was Ronald Nixon, which became transformed to Sri Krishna Prem, as he was truly in love with Lord Krishna and a devout Vaishnava in his soul and being. To all of us, who happened to come in close contact with him, he was just Gopalda and nothing more. He endeared himself to everybody in the closest spiritual relationship.

How this transformation came in his life is an amazing story, surpassing all imagination. In the first Great World War between Germany and England, Nixon, still in his teens, had joined the British Air Force. From the heights while flying, he could witness and thus had direct experience, day by day, of the devastation of human lives going on all around. His soul would cry out, time and again, in despair: Is this life? What is the purpose of all human existence?

During his service in the army, there occurred a very curious and strange incident. Being unmindful while flying, he had crossed into the enemy's territory and his plane was on the point of being shot down. But suddenly, a hand from nowhere appeared and forcibly changed the direction of the plane in which he was flying and that took him out of the enemy zone. Thus, his life was miraculously saved. His confounded soul remained guessing whose

hand it could be that changed so forcibly the direction of his plane and took him out of the enemy's zone! He felt absolutely perplexed.

On coming back home after the end of the hostilities, he tried to concentrate on his studies and got a Tripos from the Cambridge University. But his soul was as restless as before, if not more, brooding on the outcome or the purpose of human life. In that agitated state of mind, one evening while taking a stroll in the market place, he suddenly came across, through a shop-window, a statue of Gautam Buddha, in which he found a calm composure of utmost peace. Being deeply attracted, he enquired whose statue it was. He was told that it was that of a saint from India.

He then became very keen to come to India. He immediately felt that India must be a land of peace, free from all the turmoil of the Western life. Fortunately for him, just at that time, Prof. Jnanendra Nath Chakravarti, a great educationist and Vice-chancellor of Lucknow University happened to be in London. He was also a renowned theosophist, a close collaborator and friend of Dr. Annie Besant and had also attended as a delegate the World Congress of Religions that was being held at that time in Chicago, where Swami Vivekananda too happened to be a participant.

On being approached by Nixon for the post of lecturer in Mental and Moral Philosophy at his University in Lucknow, Dr. Chakravarti immediately gave him the appointment, being very much impressed by his demeanor as well as intellectual keenness. He was to return to India a little later and so he wrote an introductory letter for him to his wife, Mrs. Monika Chakravarti , requesting her to accommodate him at their own residence, till he finds his own billet.

This was the beginning of the absorption of Nixon in the family of the Chakravartis. The Chakravartis, at that time, had a tiny girl of their own, named Moti Rani, who endeared herself very much to this foreigner guest calling him by the endearing term of 'Choto Ba' , the little or young dad.

Once Gopalda had written to his dear friend, the great musician and devotee, Dilip Kumar Roy of Sri Aurobindo Ashram at Pondicherry about his inmost experience of Krishna, thus:

"To me, there He stands, no shadowy cosmic figure, but the eternal cowherd, in peacock feathers and yellow *dhoti*, maddening the soul with the ineffable music of His flute."

At that time, when I came across these wonderful lines, I had not personally known either Sri Krishna Prem or Sri Dilip Kumar Roy, who was staying in Pondicherry. But somehow or other, these lines stuck in my heart and I was in frantic search of the man. His only address that trickled to me was Mirtola, India as I found in the preface of a book, much later. Just at that time, I had an information of a religious conference going to be held in Baidyanath-Deoghar, where I was then staying. I was told that Krishna Prem will be attending that religions conference. I immediately shot a letter to Krishna Prem with the bare address of Mirtola, India requesting him to stay with us in our house as a guest, when he comes.

The proposed conference had come and gone and there was no Krishna Prem attending it. Much later, after a month had gone by, one day I found a letter in my name, written by Krishna Prem, in which he regretted that I had been misinformed and he had no desire to attend the said conference. This was the very first link with Krishna Prem, though that was merely postal. I was very keen to come in close touch with him, which fructified much later, after I had completed my M.A. course in 1941 and had taken a trip to Simla for holidaying and thence to Almora.

During my first visit to Mirtola, I had the privilege of meeting both Yashoda Ma and Krishna Prem (Gopalda) and getting their blessings. Yashoda Ma was Gopalda's guru. Krishna Prem came to be addressed by everyone in the Ashram as Gopalda. They stayed together in a part of the main temple while Moti Rani was allotted a separate house, just opposite the temple, for her own use. Gopalda was kind enough to accommodate me in a room alongside his own in the temple. I watched with great amazement that from early morning before the break of dawn and till late at night Gopalda had not a moment for himself. He devoted himself, heart and soul, entirely to the *seva* or service of the Lord. Both of

them took me very kindly as their own and narrated freely all about their privilege of actual experiences, in their life-long *sadhana*. Yashoda Ma had taken *sannyasa* from a Madhva guru at Brindavan and later on, she herself gave *sannyasa* to Gopalda, so that he could do all the *seva* and *puja* of the deities in their temple.

Day in and day out, I watched with amazement the absolute dedication to service, which was the only *sadhana* of Gopalda. It started with the raising of the deities from sleep as early as 4 A.M. in the morning and thereafter plucking flowers, making all arrangements for *puja* single-handed, doing the *arati*, giving the *bhoga* after cooking it himself and so on. Gopalda had not a moment of rest till he put the deities again to sleep after the evening *arati*. In a word, his entire life and activities were centred on the Lord (*Thakur*) alone. His spiritual advice to everyone who came to him was in accordance with that he himself was pursuing or practising throughout the day. He advised that all the activities that men of the world carry on, if not more, should be done only with this difference that they are performed centring the Lord (*Thakur*) alone. What actually matters is the spirit in which all the worldly activities are carried on. His advice was to make everything God-centred and not self-centred .

He revealed so kindly to me all the amazing and rich experiences he had, while getting engaged in the service of the Lord (*Thakur-seva*). When he first started this *seva* or service to the Lord, he would put the two images of Sri Krishna and Srimati Radharani side by side for sleep, at the end of the day after the final *arati*. But, on coming very early in the morning to wake them up and put them in the right standing posture, he became amazed to find, day after day, that the ornaments they were wearing had changed hands! The anklet of Radharani had gone to Sri Krishna and vice versa the other ornaments had changed their places, indicating playfulness among the two, throughout the night!

To many, it may be pure fancy or imagination that runs riot. It does not matter at all if the whole world denounces the reality of such things. Once, for a short period, having given the proof of his

reality, the Lord stopped all such outer manifestations and made His devotee realize that both outwardly as well as inwardly, the same one Reality was ever present to every one.

Once I had complained in a letter to him that the Lord who was an ever-present Reality to him was not to be seen anywhere. So, how can I believe that He is an ever-present Reality? Immediately, he wrote back to me in his prophetic words:

"Don't say that you do not see Him. Something appears to you better than other things in the world. That is His appearance to you. Follow it sincerely and you will ultimately reach Him."

He used to speak or write with such a conviction of his inner self or being, that it was not possible to deny or refute his statements. That is why Sri Aurobindo once wrote to Dilip Kumar Roy after going through one of his letters that this man had a '*pasyanti buddhi*', i.e., seeing intellect, which described through his flaming words what he had actually seen.

There is not enough space to go on quoting his luminous words, which have sustained me all through my life. Yet, he was so human and humorous all through. With that I will close and request those who want to know what he was in reality, to go through his two most illuminating books: 'The Yoga of the Bhagavad-Gita' as well as 'The Yoga of the Kathopanisad'.

He had come to know from a friend that I had brought a book on mysticism named 'The Cloud of Unknowing', which contains very profound philosophy. He wrote to me: 'What are you trying to unknow? Why haven't you written to me for a long time?'

Such was the man, true to the kindred points of heaven and home, an unfathomable soul, both in depth as well as on the surface.

V
Anandamayee Ma

The last of these self-realised souls with whom I had the privilege to come in the closest and most intimate contact, when I was just a child of six at Dacca, has since become a figure of

world renown and is adored and worshipped by all as an incarnation of the Divine in the female form. She is now known simply as Anandamayee Ma, the Mother full of delight alone, with a charming smile all the time in her beaming face.

Her original name was Nirmala Sundari Devi, which was also very significant, indicating the utter purity of her being as well as her innate beauty. She had been married early in her life, as was the custom in those days in Bengali society, to one Ramani Mohan Chakrabarti, who was working, at that time, as the Garden Superintendent of the Nawab of Dacca and staying in a small house allotted to him in the garden itself, called the Shah Bag.

Heavily veiled all over, with hardly a word coming out of her lips at that time, she was totally a housewife in the true sense of the term, carrying out silently all the duties of the house including cooking. But sometimes, she would lose her balance while thus working in the kitchen; the cooking pot or frying pan would fall down, with the risk of her getting burnt. The poor husband was, therefore, in great tension and worry, feeling very miserable.

Just during this period of tension, my father happened to meet both, and to make the long story short, requested the husband not to worry at all and not to interfere in such activities of his wife when they occur, because my father, somehow or other, felt that a highly spiritual transformation was going on in her inner being.

To make sure that what he (my father) had sensed as highly spiritual, he, on the eve of his retirement from service, and while leaving Dacca, called a photographer to take a snap of both Anandamayee Ma and Ramani Babu so that he could carry it to Baidyanath-Deoghar, where he was going to settle down for the rest of his life at his Guru's feet and the Guru may give his opinion about this lady's spiritual potencies after looking at the photograph.

Sometime later on after this, both the husband and the wife came to Baidyanath-Deoghar and stayed in our house for a few days and met our Sri Gurumaharaj, Balananda Brahmachariji, who advised the husband to take the same spiritual life as his wife had been pursuing.

Thereafter, it was all smooth sailing for both of them, journeying towards the same goal jointly and finally came the wide acceptance of the divinity of Mother Anandamayee and she was adored by one and all, beginning from Gandhi, Nehru and Indira down to the common-folk as the supreme spiritual Mother of all. Ashrams in her name grew up almost in every corner of India as well as in other parts of the world. But she was like a flitting bird moving from one place to another, without any bondage or attachment to any ashram. She only begged from everyone just fifteen minutes out of twenty-four hours exclusively for the rememberance of the Lord. As soon as she talked of begging something from those assembled for her *darshan*, some would slip away, some would be looking to their pockets, feeling embarressed and so on. She would narrate all their queer reaction to me, with a peal of laughter as was her wont.

FOURTH ACADEMIC SESSION

14 January 2006

The Depths of Inner Awareness : Scientific Knowledge and Research Problems — Illustrations from Maharshi's Transcendental Meditation

JONATHAN SHEAR

I. Studying Consciousness Scientifically

It is only recently that science, the most powerful form of knowledge in the world today, has turned its attention to the study of consciousness in a serious way. This is largely because the study of consciousness presents science with unique difficulties. Science requires objective, publicly accessible data, yet consciousness is essentially subjective and private. Science also requires systematic investigative methods that can produce reliable results, yet attempts by scientists to develop reliable methodologies for exploring the inner depths of consciousness have been notoriously unsuccessful. Eastern cultures have,on the other hand, been developing and using systematic subjective methodologies for centuries. The idea that the results of this work could prove useful for contemporary consciousness studies is well known. But, so far this idea remains more promise than reality.

One of the purposes of this seminar, as I understand it, is to provide a forum for people knowledgeable about traditional Eastern methodologies to interact with scientific researchers and explore ways in which their work can be integrated to the benefit of both approaches. What makes this seminar particularly exciting is that it includes experienced practitioners from a range of Eastern traditions prepared to refer to their own experiences as well as traditional accounts in the attempt to design the most useful fruitful types of protocols and studies. In this context, I have been asked to discuss experiences associated with the Transcendental Meditation (TM) program as taught by Maharshi Mahesh Yogi in the tradition of *Vedanta*.

Teachers of the TM program usually discourage people from talking about their own experiences except in the context of specific teaching situations. This is because the program emphasizes the overall growth of consciousness rather than particular experiences, and attachment to particular experiences can interfere with the innocence crucial to the effectiveness of its techniques. Nevertheless, the TM organization has on occasion published accounts of meditators' experiences. And, it often discusses two basic experiential typologies — levels *of mind* and *higher states of consciousness*. So, I will be happy to discuss these, clarifying, where I can, on the basis of my own practice.

II. Levels of Mind

Yoga and *Vedanta* distinguish various levels of mind that can be identified as one settles down in meditation. From surface to depths, these include (i) the *senses*, (ii) *thinking mind*, (iii) *intellect*, (iv) *ego*, (v) *bliss* and (vi) *pure consciousness*. Each of these levels is identifiable by its characteristic phenomenological content, namely, (i) *sensory perceptions and images* made up of colours, tastes, etc., (ii) discursive *thinking*, (iii) *discriminations* between things, (iv) the *locus of awareness* that *has* its various experiences, (v) pure abstract *bliss*, *contentment* or *happiness*, and (vi) consciousness *devoid of all content* (that is, awareness with *no objects* at all).

How are these different levels to be understood? Everyone is familiar with what it is like to have sensations and thoughts. But, the deeper levels are much more abstract, and awareness of them is often only subliminal and difficult to grasp. As *Vedanta* puts it, the silent, more subtle aspects of our awareness are easily 'overshadowed' by its grosser components and activities. But, they can become exposed to our awareness, if we let the gross activities of mind settle down in meditation.

The TM technique taught by Maharshi is designed precisely to facilitate this settling of mental activity. One of its hallmarks is its complete effortlessness, avoiding both all intellectualization and all attempts to gain particular experiences. It also uses, rather than

resisting, the natural tendency of the mind to move in the direction of greater happiness. The end result is that the mind finds itself drawn by the 'increasing charm' of its own deeper levels, as Maharshi puts it, until it comes to the penultimate depth of pure bliss. From there it relaxes spontaneously into its own ultimate nature — the silence of pure consciousness itself.

Understanding this account ultimately requires direct experience. Nevertheless, it is still possible to say something useful about each of the levels of mind referred to above. Let us begin with the deepest level, that of (vi) *pure consciousness.* This level, like all the others, can be experienced along with other levels and their contents. But, being absolutely silent and contentless, it is also the most easily overshadowed. So, ordinarily it is easiest to first become aware of it when all other mental activity has ceased, leaving it alone and undisturbed by itself. This experience is a very simple one. Indeed, logically speaking it is the simplest of all possible experiences. For, it has *no content* in it at all. When one has this experience *everything* else has disappeared — all sensations, all thoughts, all feeling, even the internal 'space' of awareness in which such things can appear. Since everything that can be imagined is external and, therefore, irrelevant to it, it is obviously *unimaginable.* Nevertheless, it can be *remembered.* What is it remembered *as?* Not *as,* or *like,* anything. Just itself.

Before having the experience, the idea of an experience in which nothing at all is there might seem strange and inconceivable. After having it, however, descriptions such as the above seem to refer to what one remembers quite straightforwardly. This response, at any rate, is very common among TM meditators, often within the first few days of beginning the practice.[1] But we should also note that new meditators sometimes do not notice anything at all when they settle down in meditation, since there is nothing in the experience at all to be noticed. This, however, typically changes as they become more familiar with this utterly silent and abstract level of awareness.

Whether (i) these meditators are all reporting precisely the same experience, and whether (ii) the experience is also the same as that reported in the texts of various traditions, are important questions that have to be addressed carefully. I have discussed some of the issues involved at more length elsewhere,[2] and going into them in depth here would take us too far afield. Nevertheless, we can note with regard to the first question that if there is, in fact, *no content at all* in the experiences — that is, if they are described accurately — then none of them can have anything in it to differentiate it from any of the others. So, phenomenologically speaking, they would have to be identical. With regard to the second question, we can note that reports of this experience by TM meditators have been highly correlated with complete suspension of respiratory activity (with no associated change of O_2 and CO_2 pressure in the blood).[3] This result, while very surprising from the perspective of Western physiology, is just what *Yoga*, *Vedanta*, *Taoism* and *Zen* would lead us to expect, if the experience really is that of pure consciousness by itself.

It is still possible, of course, that these experiences could have some unnoticed, highly abstract content that could in principle differentiate them. So, in what follows, we can, if we wish, take the expression, '*the* experience of pure consciousness,' to refer to a closely related, extremely abstract family of experiences that appears to be completely contentless, devoid even of a spatio-temporal manifold in which content could appear.

The second deepest level, that of (v) *bliss*, is also very abstract. As one comes out of the abstract level of (vi) pure consciousness by itself, one typically feels very contented. At first one might not notice this almost completely abstract feeling of contentment either, since it, like pure consciousness, is independent of all concrete content. But as one comes out further, intellectual recognition of the feeling is likely to arise, along with a desire to enjoy it more. Related feelings of unshakable fulfillment and overwhelming, impossible-to-grasp joy are also common in this subjective 'neighborhood' and illustrate various aspects of the penultimate level (v) *bliss* in the above typology.

The following sequential experience, familiar to many TM meditators, can be used to illustrate the next two levels of mind, (iv) ego and (iii) intellect.

If one comes out of the experience of pure consciousness slowly enough one can also find one's awareness suspended in, and even permeating, what seems to be *pure unbounded space.* Here there are no thoughts, images or sensory objects - nothing but the unbounded (phenomenological) spatio-temporal manifold permeated by one's awareness.[4] At this point, there is only the experience, without any conceptualization, not even the simplest recognition, 'this', much less the complex recognition that one is *having an experience.* Then, all at once a non-verbal recognition, 'something!', can appear, followed by an inchoate question ('unnh?'), and a more coherent "What. ..is ...?" Finally, there is the recognition 'Oh, meditating!' and as one emerges further, sensory awareness of body and environment, one either comes out of meditation or continues and settles down again.

Here, the experience of one's awareness permeating empty space would appear to display the level, the *ego*, 'undisturbed, awake in itself', holding 'its individuality in the void', as Maharshi describes it, 'the abstract fullness around it — because there is nothing for it to experience.'[5] The non-verbal recognition, 'something!' reflects the *intellect's* initial response to the duality, awareness/space.[6] Then come the more obvious levels of (ii) *thinking mind* with its verbalized concepts, and (i) *sensory* awareness of body and environment.

III. Growth towards Higher States of Consciousness

Until they learn to meditate, most people find it very difficult, if not completely impossible, to experience the deepest levels of mind with any clarity, as the writings of eminent Western philosophers such as, Hume and Kant, and the centuries of argument that followed readily show. However, in meditation the nature of these levels can emerge clearly, unobscured by the grosser activity of the more surface levels. With sufficient familiarity, what had formerly been at best subliminal can become explicit, and

then remain accessible throughout ordinary awareness, at first, perhaps, only when one is quiet and relaxed, but eventually even during dynamic activity. In this way, what are called 'higher states' of consciousness can emerge.

An example from my own experience may help illustrate something of what is involved in an early stage of this growth.

Nearly thirty years ago, about a year and a half after attending an advanced course given by Maharshi, I had some unusual experiences of energy rushing up through me and expanding. This happened a number of times over a period of several days. Then about a week later, while driving a rental car in Chicago, where I happened to be lecturing, I noticed that what I call my 'self'—the consciousness that I am—seemed to fill my entire perceptual awareness: my hands, the steering wheel, the dashboard and windshield and everything else I saw. I had the thought that until that moment I had normally seemed to be 'inside my head' looking out at the world through my eyes. But now, phenomenologically at least, I was filling the entire 'space' of my perceptual awareness, and the earlier type of experience seemed so strange that I could hardly remember what it was like at all.

In one sense, nothing much had changed. *Everything* was just as it always was. But, in another sense, *everything* had changed subtly but significantly. There was a new *gestalt* to all of my experience. This new mode has remained the norm for me ever since. Normally I do not think about it much, but it is there to be noticed whenever I do, and its nature often dominates when I am particularly relaxed and at ease. This awareness of 'self' filling my perceptual space can vary. Sometimes it seems very abstract, and at other times it seems filled with the delicate, sweet feeling I associate with happiness and love. And, although I hesitate to say it publicly, it seems as though this experience somehow puts me in contact with life itself.

This example is only one out of a huge variety of possible developmental experiences, and, compared with those of many other TM meditators, a rather mundane one at that. Studying such experiences scientifically, of course, requires that they be grouped into simplifying categories.

IV. Higher States of Consciousness

Maharshi uses a typology of *higher states of consciousness* to help sort out the many possible experiences that can occur as consciousness develops. In this typology, he describes four 'higher' states beyond the three commonly experienced ones of waking, dreaming and deep dreamless sleep. The first higher *state* is (i) *transcendental consciousness.* This is simply the deepest *level* of mind, pure consciousness, *experienced in isolation* from all other levels and empirical content. That is, it is pure consciousness *alone by itself.* The second, (ii) *cosmic consciousness,* is defined as the state in which experience of pure consciousness, the ground of one's awareness, has become so stable that it remains permanently accessible throughout all of one's other experiences and states. In other words, here pure consciousness is maintained *along with* all other experiences, including one's dreams and even deep dreamless sleep. The third higher state, (iii) *glorified cosmic consciousness,* emerges when, having operated on the basis of the silence of pure consciousness for a long enough time, the functions of consciousness have all become so refined that all perception is in terms of its subtlest components, and everything is experienced in terms of unbounded bliss and love. This state is also often referred to as *God consciousness,* since it is here, according to Maharshi, that one's unbounded love spontaneously becomes concentrated in devotion to God, its source and natural object. Finally, in (iv) *unity consciousness,* everything is said to become experienced as *nothing but* (expressions of) pure consciousness itself.

This typology would identify the experience described in the previous section as a phase in the development from (i) *transcendental* consciousness towards the next higher state, (ii) *cosmic* consciousness, also often reported by TM meditators. In reports of more advanced experiences from an advanced course led by Maharshi some years ago, we can locate features characteristic of (iii) 'glorified' cosmic consciousness, such as, (a) perceptions of

minute particles and waves at the basis of everything, (b) feelings of one's heart 'melting', cherishing everything in creation with pure love, and even (c) divine radiance and God.

In some cases we can also note features characteristic of (iv) unity consciousness, such as, (d) perceptions of stillness underlying all motion, and no distance or separation between one's self and anything else in creation, and (e) everything in creation as made up of the same 'stuff' as one's self-consciousness itself.

Such highly advanced experiences are, as might be expected, reported much less frequently than the more basic ones described above.

JB Ontario Canada: As I felt my power and inner strength increase, I also noticed a totally new feeling of softness and sweetness developing. There were days when I felt my heart melting as if I could take everything in creation into myself and cherish it with the greatest love. Often I would have long periods of the day when everything I saw seemed to be glowing with divine radiance. Sometimes I would even be able to see the tremendous energy at the basis of every object, minute particles of energy (light?) moving very rapidly at a different rate and pattern for every object, yet unified somehow in a 'unified field'.

MH California USA: One experience I could briefly mention — it is nothing flashy, but is constant and enjoyable, and it occurs very frequently. It is of being completely enveloped in an indescribable, soft, divine gentleness. It embraces me outside and is lively within me. I feel, I am that indescribable thing, so enormously wonderful, beyond intellectual description, so complete, so lively with pure love. I call it God, because that is just what comes to mind when I experience it. I feel infinitely protected and cared for.

CP Colorado USA: I was experiencing deep wonderful silence and having my first clear experiences of infinite correlation, that is, being in such an unbounded, infinitely orderly and harmonious state of awareness, that an impulse in my awareness seemed to be instantly connected with all of creation. When I say 'instantly'

connected with creation, I mean that there was no time value separating me from any part of creation.

LA West Virginia USA: Wholeness expands and grows into bigger wholenesses, it seems. ..The only reference point is my Self...Body and environment are not separated. It seems all of creation constitutes the fluctuations of my body and consciousness. These fluctuations have a quality of sameness. The same style of wave function is in everything. It also seems that every object contains all sizes of waves, all in some kind of synchrony. Yet, underlying that, there is no movement or fluctuation.

CB Texas USA: I began experiencing bliss consciousness intensely during activity at times. When this happened, I often felt as if consciousness were pouring out of my eyes and forehead like a beam of light made up of consciousness. This beam of consciousness would illuminate the value of consciousness in whatever I was looking at. In this way, I experience both myself and the object of perception as being made of bliss consciousness. When objects are perceived in this light, they seem much more wonderful and satisfying than normal, and the whole process of perception becomes very soothing and fulfilling. In this way, everything becomes extremely valuable because it is so delightful. Also, everything seems to belong to oneself in a way because everything is made of the same stuff as one's Self, absolute bliss consciousness. Everything is wealth when bliss consciousness is the dominant value of all objects of perception.[7]

We should note several things here. In Maharshi's typology, one is said to be 'in' one of the three highest states (cosmic, glorified cosmic, and unity) only when the content appropriate to it has become permanently stabilized, and people often report having the relevant experiences temporarily. Furthermore, since the highest states are defined as including, as well as going beyond, the contents of the lower ones, someone in one of these states can report contents characteristic of a lower one. And, it may not always be clear whether a given experience corresponds to a defining characteristic of a given state (e.g., whether an experience is really

of a *subtlest* aspect of perception, or merely *very* subtle). Thus, it would not be possible to determine with confidence a person's state of consciousness merely from descriptions such as the above. Nevertheless, Maharshi offers this typology as an overall description of how states of consciousness characteristically develop, and to serve as a rough measure of one's own growth. And, meditators throughout the world seem to have found it very useful.

This typology has also proven useful in guiding research on TM meditators, as the respiration studies cited above may indicate. To the extent that its phenomenological categories and developmental sequence are congruent with those articulated, developed by other meditation traditions, it may also have much broader research implications as well. It is my hope that seminars such as this one can help lead to the development of cross-traditional categories and typologies as the basis for truly significant meditation-related research. For there are many reasons to think that collaborative research involving a broad spectrum of different meditation traditions can produce more significant, better designed, better funded and more influential studies than those conducted more parochially.

V. Objective Reality

Research on meditation can take many directions. It can focus on questions of the nature and development of particular subjective experiences and states. It can also examine their psychological, physiological and behavioural correlates and effects. Where meditation-related experiences appear to be *about the world,* however, they raise very different kinds of questions requiring very different kinds of research. For, establishing the existence, content and effects of experiences is very different from establishing that the experiences *accurately reflect* what they seem to be about. Experiences gained in meditation have often been associated with unusual claims about reality, and these, in turn, lead to questions about how true, if at all, these claims really are. If unanswered, these questions can lend an air of unreliability to the meditation

and meditation research, in general. Even the few experiences reported above provide many examples. For, what evidence do we have that, despite how things *appear* to them, meditators are *really* perceiving, as they report, fluctuations of the 'stuff' that lie at the basis of all creation, whether as energy, particles and/or waves? Is the ground of all reality *really* locatable deep within the basis of one's own awareness? Is one's own consciousness *really* connected with all of reality instantaneously, and thus a-temporarily? And, can one *really* have direct experience of *God?*

One response to these sorts of claims is that accepting them is a matter of faith, for they are not the kinds of things that can be established objectively. This response, of course, is of little use for nonbelievers. It is also, I think, simply incorrect. For, to the extent that claims are about *what* the experiences appear *to refer* to objectively — as distinguished from the *experiences themselves* — *they* ought, *in principle*, to be testable. Let me use an experience I myself once had long ago, to illustrate.

This rather remarkable experience, which occurred while I was sitting quietly (in meditation), unfolded in stages. In the first stage I found my awareness, experienced as a locus of bliss and light, extending spherically outward for some distance, in an enormous space filled with the presence of an unfathomably huge, unbounded mind, also experienced as bliss and light. Behind me was the wave-filled surface of a huge ocean of unbelievably, unutterably intense, self-luminous bliss, bliss beyond anything I had ever imagined. And, in front of me was an amorphous area that presented itself to me as the ordinary universe. I say 'presented itself' because each component of the experience appeared to present its nature to me *directly,* with what we ordinarily take to be discursive understanding. ... from within as part of its self-luminous perceptual appearance. The ocean presented itself as the ultimate in fulfillment — that which one ultimately wanted in every other thing one could ever desire. And, the enormous, unfathomable mind that filled the whole scene was experienced as (somehow) orchestrating the whole cosmos from this field of sweet, utterly gentle, thrilling, self-

luminous, white-gold field of pure delight. I then found myself settling *into* the ocean, where the experience became enormously abstract, and then finally, *out of the bottom* of the ocean, where there was absolutely *nothing*. Yet, a nothing which *was,* I immediately recognized, as soon as I emerged. The whole experience then repeated itself.[8]

This experience, while perhaps rather ordinary from the perspective of more highly evolved meditators, was for me profound and entirely unexpected. Even though it only occurred once, it has had a lasting impact on my life. It also raises obvious questions. Were its contents *objectively real,* in the sense of existing outside of my own individual awareness, *merely artifacts* of my own consciousness and/or nervous system? Had I *really,* deep within my own consciousness, experienced a domain outside the whole material universe from which it arose and was continuing to be influenced? Someone might perhaps reply, "You have to have such an experience to know the truth here, and when the experience comes, the answer will be self- evident!" But, this will not help me at all. For, despite the seeming self-evident nature of the experience, the first verbal thought that appeared in the empty expanse of awareness as I came out of it (before, in other words, I noticed I was an individual mind, realized I had been meditating, had any awareness of a body, etc.) was simply, "But there's no criterion!" To be satisfied, my own intellect, at its depths, needed more.

Common sense and science both need more as well. And, this more could, in *principle* at least, be obtainable. All we would need someone sufficiently advanced in *Yoga* that he or she could access the relevant domain of consciousness and activate the faculty *(ritambhara prajna)* held by *Yoga* to be capable of displaying any objective fact whatsoever. This advanced practitioner could then be asked to go 'in' to the relevant depths, activate this faculty, observe some phenomenon elsewhere in the solar system (current sunspot activity, for example, or input to a Saturn-orbiting satellite) and report it before even *light* from that region of space could

reach the earth (eight minutes and one hour, respectively, in these examples). Since, such information would be impossible to obtain by any physical means according to modern science, obtaining it and corroborating it after the relevant information arrived here at the speed of light, would provide direct evidence of contact deep within consciousness with a level of reality both outside of the physical universe (as understood by modern science), and in immediate contact with its far reaches.[9] Positive results would produce a scientific uproar. It would also transform how science, and the world as a whole, would regard consciousness and its potentials. It would only require sufficiently advanced practitioners to step forward to be studied. This, of course, has not happened.

There is, I think, a moral to be drawn here. Ontological (reality) claims made on the basis, solely of the phenomenological content of meditation experiences, all too easily lead independent observers to discount meditation-related claims in general, no matter how well substantiated they might be. We thus, I think, have a responsibility to distinguish the phenomenological and ontological aspects of experiences clearly, emphasize that evidence supporting the one does not necessarily support the other, and carefully tailor our claims of fact to reflect what has and has not been supported by actual research. In this way, perhaps, inappropriate discounting of meditation and related research may gradually become defused.

VI. The Real Value of Consciousness Research

Even if all the extraordinary ontological claims ultimately prove to be false, as well as unsubstantiated, the experiences retain their enormous value. They are deeply fulfilling in themselves, and capable of transforming our sense of what is truly worthwhile in life. Meditation traditions have claimed from time immemorial that as these experiences are gained, values naturally evolve: appreciation of what we are as conscious beings comes to the fore, compassion for others grows, obsession with material consumption declines, and dysfunctional aggression and competition decrease. These are all empirical claims, evaluable by the methodologies of modern science. The real value of research

on consciousness, as I see it, is to determine how practical these claims are, all matters of ontology aside. For, the transformation they promise, based on inner fulfillment rather than ideology, is precisely what our modern world needs.

References:

[1] Questions of *frequency* of experiences and reports should, of course, be addressed scientifically. I am unaware of relevant research however, so the frequency assessments I report here are merely anecdotal. Nevertheless, they (i) reflect my own experience of teaching the TM technique to more than 850 people and interacting with thousands of meditators in philosophy classes at Maharshi International University and lectures and seminars throughout North America, and (ii) conform what I have heard from other teachers of the technique.

[2] See, for example, my "Eastern Methods of Investigating Consciousness," in A Companion to Consciousness, edited by Max Velmans and Susan Schneider (Blackwell Publishing, 2006), and "Pure Consciousness: Scientific Exploration of Meditation Techniques", co-authored with Ron Jevning, *J. of Consciousness Studies,* Vol. 6, No. 2-3, 1999 and reprinted in *The View From Within: First-Person Approaches to the Study of Consciousness,* edited by Francisco Varela and myself (Lawrence, KS: Imprint Academic, 1999).

[3] See, for example, Farrow, J.T. and Hebert, R. 1982 "Breath suspension during the transcendental meditation technique", *Psychosomatic Medicine,* 44 (2), pp. 133-53, and Travis, F. and Wallace, R. 1997: "Autonomic markers during respiratory suspensions; possible markers of transcendental consciousness", *Psychophysiology,* 34, pp. 39-46.

[4] *Compare Avicinna's (Ibn Sinna) famous "man in space" analogy*

[5] Maharshi Mahesh Yogi, *On the Bhagavad Gita: A New Translation and Commentary, Chapters 1-6* (Penguin Books 1974) p. 422. Compare also Avicinna's (Ibn Sinna's) famous "man in space" analogy.

[6] This would seem to be the most basic instance of what Bertrand Russell famously identified as the most ubiquitous and certain intellectual distinction of all, namely, "I – this". Later, unable to identify, or even imagine, the relevant abstract experiences, he eventually rejected this

identification on the grounds of his empiricist epistemology. A little meditation might have gone a long way here, with significant effects on the course of Western philosophy.

[7] *Creating an Ideal Society* (MERU Press, 1976) pp. 78-85

[8] Jonathan Shear, "Mystical Knowledge?", *Sufi*, Autumn 1995, pp. 12-16

[9] Related experiments can also readily be designed for other components of the above experience (e.g., the objective universe's being influenced from that deep level, and the existence of a huge, independent, all-encompassing mind. Positive results here would, of course, be even more revolutionary.

Consciousness of the Self : The Only Path to Spiritual Serenity

NILANJANA SANYAL

The human race is suffering. The high-tech societal system has turned this world into a 'global village'. Marks of advancement in life are there in the materialistic achievements, despite philosophers' earnest orientation towards inner realization to create space for real taste of life and living. It is not only the common mass, but personalities with superior intellectuality too seem oblivious about what goes on in our life as such and where we really need to be focused to derive the real essence of life.

Psychology, the scientific form of openness into existence and beyond existence experiential processes is trying to strike the right chord of the mind — the concept of 'consciousness' of the 'self' to engrave the real pitch of subjective individuality amidst so many objectivities to link 'thy' self with 'thine'. This is to have full enrichment of emotionality to guide cognition and conation in right direction to enjoy the flow of life to its brim and escape wraths of sufferance.

Hence the need to probe into the processes of consciousness and to draw their implications in life.

Phenomenology, being a specific conceptual wing of psychology introduces 'semiotic' dimension in analysis of 'consciousness'. Unlike cognitive, neurobiological or so to say behaviouristic modes, phenomenology holds the view that mind is the goal of body. The existence of one's body is fact, the feeling that one's body is just the vessel for the mental processes or rather the experiences, is the truth. The experiences belong to the realm of 'consciousness' — the experiencer being the self.

Historical Evolutionary Thoughts behind Consciousness

Conscious experience is part of the natural world, and like other natural phenomenon, it cries out for explanation. The clustered explanations have two major points of concentration: the very *existence* of 'consciousness' and the specific *character* of conscious experiences. Before going deep into the mechanisms of these two aspects of 'consciousness', a brief historical review regarding our attitude towards consciousness is needed. As a specific mental issue, consciousness can be analyzed as a phenomenal concept, a psychological concept or as a combination of the two. Progress in psychological theory rather than in philosophy was responsible for drawing the two aspects of mind apart.

Psychologists, Wundt and James, were recognizably Cartesian in that they used introspection to investigate the causes of behaviour. In this fashion phenomenology was made the arbiter of psychology. Sigmund Freud and his contemporaries solidified the idea that many activities of the mind are unconscious. Freud construed the notions *causally*. Explicitly he recognized that accessibility to consciousness is not essential to a state's relevance in the explanation of behaviour, and that a conscious quality is not constitutive of something's being a belief or a desire. These conclusions rely on a notion of mentality that is independent of phenomenal notions. Around the same time, the behaviourist in psychology had thoroughly the introspectionist tradition. A new 'objective' brand of psychological explanation was developed with no room for consciousness in its explanations. But, to bridge the gap between the ideas regarding consciousness and its inclusion within the spread psychological analysis, psychologists like Searle (1990A) had pinpointed the experiential aspects of believing, where belief is considered mostly as a psychological property. He argued that the intentional content of a belief depends entirely on the associated state of consciousness or on a state of consciousness that the belief can bring about. To him, without consciousness, all that is present is 'as if' intentionality.

Hence, as a middle way between the extremes of notions, consciousness within the realm of phenomenology is accepted as not merely being contingently associated with organisms but as functional property of human behaviour. (Mandler, 1985; Humphrey, 1983). To cover both the existence and character aspects of consciousness, amidst the variations in stated notions, commonly thus consciousness can be defined as "a fundamental aspect of reality, at all levels". It participates in the continual creative advance that, in bringing the past into the present, opens up a space of possibilities from which choice makes a bridge to the future.

Functional Folds in Variation of Consciousness

To draw the implications of consciousness in our wider spectrum of life, the existence and character components of consciousness need a little more elaboration. Such elaborations are expected to reveal the basic 'feel' of consciousness, once again in phenomenological parlance of conception and analysis. Within the folds of experience different varieties of consciousness can be conceived:

Awakeness: This is an ability to process information about the world and deal with it in a rational fashion.

Introspection: This access to one's mental states is an important component of the everyday concept of consciousness. This is the process by which we can become aware of the contents of our internal states.

Reportability: This is our ability to report the contents of our mental states. It presupposes the ability to introspect, but is more constrained than that ability; as it presupposes a capacity for language.

Self- consciousness: This refers to our ability to think about ourselves, our awareness of our existence as individuals and of our distinctness from others.

Attention: We are conscious of something when we pay our attention to it, that is, when a significant portion of cognitive resource is devoted to dealing with the relevant information.

Voluntary control: A behavioural act is conscious, when that act is performed deliberately, that is, where the action is caused in the appropriate way by an element of prior thought.

Knowledge: Someone is conscious of a fact precisely when he or she knows the fact.

Character Aspect of Consciousness

Although these concepts have a psychological core, they are associated with phenomenal states also. To have a glimpse of this phenomenal angle to consciousness, the character aspect of consciousness is elaborated in the following fashion. In Sartre's (1971) opinion, consciousness is present to itself, it is self-predatory. Consciousness is 'itself' transcendent, to the extent then, that it has an 'itself', consciousness as reflectively known 'remains in the same place, indefinitely absorbed, devoured and yet indefinitely intact, wholly digested and yet wholly outside, as indigestible as stone...the 'digested indigestible' ...'(p739). Consciousness is thus the 'identity of appearance and existence' (Sartre, p17). It is pure 'appearance' in the sense that it exists only to the degree to which it appears. To whatever extent it appears, it appears exactly *as it is*. It cannot appear in alternative ways.

In the Transcendence, Sartre (1972) attempts to reconcile the utter transparency of consciousness with its prescience to reflection by positioning the two, respectively, in the arms of an ostensible distinction between the 'inside' and the 'outside' of consciousness. Granted that 'an absolute interiority never has an outside' (p84), yet the psychic, ' the transcendent object of reflective consciousness'(p71) is its outside. Consciousness could not be intrinsically 'empty' and transparent. Outside has invaded inside. Reflection, though it retrieves the surface glare, would nonetheless be incapable of apprehending consciousness 'itself'. To see consciousness (itself) is to see through it. Its 'self' is this deferral. Reflective consciousness effaces 'itself' in the face of pre-reflective consciousness of the world. Only one 'face', one manifestation, remains for both. The (ostensibly) 'two' cannot be distinguished.

The transparent is not an intuitive prescience but rather the condition for the phenomenal opacity of being-in-itself.

But, whatever may be the experience and character part of consciousness, to fathom the depth of consciousness and draw the same energy for further advancements in life, there needs to be an ' experiencer', the firsthand, first personal experiencer, the 'self'. To unfold the functional impact of consciousness, its relation to its agent, the self and the selfhood, need to be established.

The Concept of Self

Self is an entity marked by reflexive consciousness, interpersonal rates and reputation and executive function. Without these bindings, the concept of self becomes meaningless. Self begins when awareness turns around in a circle and offers some realization or absorption of meaning from life context itself. In its characteristic folds:

- Reflexive consciousness gives awareness to the self.
- Interpersonal strings add meaning in self's life in extensive social contacts.
- The executive platter serves self as an entity that makes choices and decisions, initiates action and takes responsibility.

These features together orient the self towards consciousness regarding external and specially regarding internal reality. The relatedness of self to consciousness seems to be the most important infrastructure of the individual self to initiate the process of improving the 'stay-quality' in the world being enriched in internal realization capability.

Experience happens to Experiencer

Consciousness involves a Self-appearance

On the phenomenological view, a minimal form of self-consciousness is a constant structural feature of conscious experience. Experience happens for the experiencing subject in an immediate way and as part of this immediacy it is implicitly marked as '*my experience*'. For the phenomenologists, this immediate and first-personal givenness of experiential phenomena must be accounted for in terms of a pre-reflective self- consciousness.

In the most basic sense of the term, self-consciousness is not something that comes about the moment one attentively inspects or reflectively introspects one's experiences, rather the process seems to have its embeddedness in pre-reflective consciousness. The reflective self-consciousness is a higher order cognition. Pre-reflective self-awareness is an ongoing and more primary self-consciousness. Consciousness always involves a self-appearance. Experience is always self-manifesting. Pre-reflective self-consciousness is not simply a quality added to the experience, an accessory, rather it constitutes the very mode of being of the experience.

Reflective self-consciousness is an explicit, conceptual, and objectifying awareness that takes a lower-order consciousness as its attentional theme. In phenomenology, it is called inner-perception as contrasted with outer. The self is there before all reflection.

Reflection is only a mode of self-apprehension, but not the mode of primary self-disclosure. (Heidegger 1989, p226) One advantage of the phenomenological view is that it is capable of accounting for psychological self-identity, that is, the experience of self-identity through time, without actually having to project the self as a separate entity over and above the stream of consciousness. Pre-reflective self-awareness is thus distinctly different from explicit self-consciousness. In pre-reflective self-awareness, one is not confronted with a thematic or explicit awareness of the experience as belonging to oneself. Rather the dealing is with a non-observational, non-objectifying self-acquaintance. Basically, the notion of pre-reflective self-awareness is related to the idea that experiences have a subjective 'feel' to them, a certain (phenomenal) quality of 'what it is like' or what it 'feels' like to have them. It is a case for perceptual experiences, experiences of desiring, feeling and thinking. All the experiences are characterized by a feeling of 'mineness'.

Self-Consciousness: An Element of Inheritance and Semiosis

Within the perspective of pre-reflective self-consciousness, evidences from developmental psychology and ecological psychology suggest that there is a primitive, proprioceptive form of self-consciousness already in place from birth. This primitive

self-awareness precedes the mastery of language and the ability to form conceptually informed judgements and it may serve as a basis for more advanced types of self-consciousness. (Neisser, 1988) Selfhood emerges within infant-adult interaction. (Butterworth, 1995, 1999) Selfhood is thus a process that emerges from social interaction and is sustained by cultural signifiers and practices. But the process itself exists prior to culture. Semiosis is a fundamental aspect of the way the living world works. In fact, human selfhood depends on the human form of consciousness being conditioned by the symbols that are assimilated from the cultural milieu. However, consciousness qua awareness existed prior to the appearance of this milieu and arose along with the evolution of all living beings. And, since the key to human selfhood is the capacity to use symbols, answers are framed in the language of semiotics. General theories of signs are called semiotics. This includes the investigation of apprehension, prediction and meaning: how it is that we always develop meaning, make predictions and apprehend the world. The space is one of signs, of internal dialogue, interpretation and evaluation of both what has happened and what might happen.

The process is one of symbolic interaction, both within the self and between the self and the sign-world it inhabits. It is this process with its inner structure that is unique to human mental life and which provides the basis for human self-awareness. In brief, 'the self' is a semiotic process. In its functional dimension the interpreter encounters the sign and the object is produced. This process involves components both inside and outside the individual. The internalization of this process is assumed to create the human sense of self. What is internalized initially derives from the actions and gestures of human social interaction. At later stages in the development of the individual, cultural symbols, such as, speech and writing, also become important.

In Wiley's (1994) contention the semiotic account of the self has three components:

The *me* is the past.

The *I* is the present.

The *you* is the future.

The present self interprets the past self to the future self. The 'I' and the 'you' interpret the 'me' in order to give direction to the 'you'. Semiotically, the I-present functions as a sign, the me-past as an object and the you-future as the interpretant. In Wiley's terms: "As the self moves down the time-line its semiotic process is constantly transformed, with a past interpretant becoming a present sign and then a future object." As these components of the self interact and exchange identities, the process moves from situation to situation. Prior to the development of speech, the signifiers will be the actions and gestures which precede language. (Lock et. al. 1989) As the human being develops, the signifiers increasingly reflect linguistic and cultural patterns. The human selfhood, in its adult form is supported by a cultural-semiotic process. As we pass from physical through biological towards psychological levels of organization, habits move away from ineluctable physical laws and towards organic flexibility, eventually arriving at human self-awareness and freedom to choose. Evaluation thus can be seen as a process of semiotic enrichment. This semiotic coupling of perception and action is the product of both phylogenic and ontogenic learning.

Relationship Perspective of Semiotic Self

The semiotic self emerges within a web of relationships. In the perspective Neisser (1988) distinguished between five types of self-knowledge:

1. **The ecological self:** It is directly perceived with respect to the physical environment.
2. **The interpersonal self:** The emergence of a core sense of a human self may depend on emotional experience. The emotions as founding factors are thus considered as constitutive of self.
3. **The genetic self:** The extended self, which is based on memory and anticipation and implies a representation of self.
4. **The private self:** It reflects knowledge that conscious experiences are exclusively our own and this is also dependent on representation.

5. The self concept: It is defined as a theory of self-based on socio-cultural experience.

A developmental analysis reveals many links between the conceptual self and its preconceptual underpinnings. A symbolic form of self permits a conception of self as unique and supports reflective self-awareness and a private perspective. It is the primacy of the ecological aspect of self which makes the mental experience of self, to the introspective adult, so real.

Being equipped with knowledge from so many different sources the self becomes ready to enjoy the hedonic tunes of love in life format and absorption of light through internalization of spirituality.

Consciousness of Self as Pathway to Deeper Understanding in Spiritual Tune

The spiritual tune in consciousness includes a belief in a power operating in the universe that is greater than oneself, a sense of interconnectedness with all living creatures and an awareness of the purpose and meaning of life and the development of personal, absolute value of trust, peace and harmony within the fringes of phenomenal consciousness of self (Smith,1994). Higher consciousness brings deeper understanding. It unlocks ones intuitive awareness of higher truth. One's ability to directly perceive and correctly interpret Divine spiritual content and reality belongs to our spiritual nature. We lose access to it, however, when we rely too heavily on the lower mind thought processes which dominate ordinary levels of vibrancy and consciousness. As one's state rises, higher mind knowing naturally asserts itself like the sun peeping through clouds. Higher consciousness thus simply refers to this 'serene healthy space'. When the inner consciousness is raised, perceptual perspective changes and we look at the world differently. Things we never noticed before, become suddenly obvious to us, things we never understood before finally make sense. With temporary elevation of consciousness, there may be a flash of insight on our part, but its retention depends on the practice of the self to move to the areas of consciousness repeatedly.

Considering the impact of spirituality in life, our conception can go like this. Mystic practice is a time-honoured space machine. We gain healthy space when we briefly withdraw from worldly concerns, pray, meditate or practise other spiritual disciplines. We gain an even more durable and versatile form of space by practising such spiritual qualities as compassion and forgiveness in daily life of outer reality. That kind of inner discipline earns us blessed, welcome distance from our lower reactive patterns and leads us to higher consciousness.

In fact, qualitative enhancement of self being the product of phenomenal consciousness seems essential for spiritual advancement. Spiritual advancement is aspiration point to invite greater sense of well-being and earning better stay-quality in the world. The special vibrancy of such consciousness provides a refined form of clarity that contributes greatly to general well-being. It gives us certainty about what is truly important in life, foresight into where trend lines are headed and insights that solve or prevent problems. The basic attainment is positive perspective towards the outer world through wider identification earned from inner realization of threads of consciousness. Higher consciousness is what we experience when raised energy illuminates our minds, brightening all our thoughts and perceptions and allowing us to more easily tune to the higher frequencies of divine thought and energy. In fact, we human beings are sensitive to mystic realities only when our consciousness is sufficiently high. Thus, higher consciousness brings with it many wonderful benefits. It gives us a higher perspective, brighter presumptions, greater clarity and improved discernment. Mystic heights show us panoramic views that can be seen nowhere else. While experiences cannot force our presumptions to change, they do shift automatically as our state of consciousness rises or falls. Thus, the best way to improve our presumption is to improve our consciousness, where the self would have the maximum scope of liberation and such liberation ultimately is expected to take us to the realm of serene feelings.

Many people might consider mystics to be misfits in the workaday world. Their knowledge is indeed limited. Mystics enjoy many life-usable advantages over their more mundane-minded beings. To mystics, life is *one*. And to them, oneness is a first-hand experience, not just a philosophic belief. It is their *observation* that the medium of pure *being* connects all of *life* to *itself*. True compassion arises out of the mystics' authentic-experimental-realization of cosmic truths, subtle *Universal* realities of life—the phenomenal consciousness. The awareness of *life-unity* naturally promotes considerate, sensitive, peaceable living. Every mystic knows that harmony starts in the mind. But, mystics maintain far greater vigilance against inner negativity in all its forms. Progressively, they gain and maintain improved mastery over subtle levels of causation, as the superficial control of *word* and *deed* matures into the responsible discipline of *thought*, *attitude* and *belief*, as well. A more deeply peaceable orientation, mindful of the unity of life, cannot fail to confer tremendous spiritual advantage all around. Steering by spiritual principle may seem to be better than steering by mundane moral rules. This self-transcendence attitude is the product of consciousness and seems essential to mental health and personal development. (Farrow, 1984) Indeed, the scale of human beingness has an astounding range of keys. How well we choose and play the notes at our disposal defines the quality of our presence and the influence we have on the world around us.

Connecting spirituality with consciousness of self (Steinback, 2001) has brought out the distinctiveness of interpersonal attention, once again, the product of consciousness of self being related to outer contexts in life, with that of character component of functional consciousness in the form of perceptual attention in the following fashion. He thinks in phenomenal consciousness:

- whereas things and ideas are given in the mode of *presentation*, persons are given in the mode of *revelation*,
- whereas objects or things are presented *thematically* against a background and to be given with inner or outer spatio-

temporal horizons in perceptual attention, in the other persons life *fully but not exhaustively* in acts peculiar to spirit, as a movement which is not profoundly generative,

- whereas the thematic presentation of object emerges as *affectively* significant, the self revelation of persons is *emotionally* significant,
- whereas the thematicity of objects or aspects of objects emerges in the mode of affective *prominence* against a background, the fullness of a person's presence is given as absolutely unique in the mode of *annunciation* peculiar to the emotional life and most profoundly loving,
- whereas the affective prominence of objects exercises an *allure* on the perceiver or thinker, the annunciation of persons in their exemplary value modalities functions as an *invitational or evocative 'ought to be'*,
- whereas an allure can '*motivate*' a perception or a thought, an annunciation *'requires'* an emotional grounding,
- whereas one can *prompt* or *motivate* something into presentational appearance, the revelation of a person is a freely *self-giving movement* that is at most *inspired* or *aroused* through emotional identification in consciousness realm,
- and lastly, whereas an object is the *end* to be seen through its affective force, an exemplar through its 'tug' is the *way* to see as an invitational force.

Conclusion

Hence, in an overall stance, regarding the spiritualistic orientation as an extension of consciousness of self a particular summarizing comment can be made in the way as in real estate sales a favourite *mantra* is 'location, location, location!'. The spiritual equivalent needs to be 'perspective, perspective, perspective!'—an all-pervasive positive perspective of feeling, the cosmic energy in the form of phenomenological consciousness.

Actually, the bearing of this discussion lies in the fact that the world is chaotic, we need to touch the tranquility of inner world of consciousness and absorption to have the serene feeling of peace and harmony. We need space for mental and emotional health — for overall well-being. And there is more: in spiritualistic orientation, healthy detachment expands far beyond soundness of mind and spirit, into truly ecstatic boundlessness and unlimited freedom. It allows the self spirit to soar into the spiritual skies.

To conclude the discussion on our effort to fathom the deep dynamics of consciousness of self from phenomenological aspect and to establish the connection of higher planes of spiritualism, let me quote Hoffmeyer(1996) to add our effort with experience like this: 'This world has always meant something. It just did not know it. Now with the evolution of self-awareness, it knows it, or rather, we know it.' The implied value of this whole experience lies in the fact in the lines of Rubert Sohl (1970) —

"There is no place to seek the mind;
It is like the footprints of the birds in the sky."

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On the Seat of Consciousness

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I

Different ages of human history are marked by the emergence of new major areas of intellectual enterprise. If Ionian thinkers started with the study of Nature and Socrates turned man's attention to the study of man and morals, then the middle age saw the emergence of theology or the study of the Theos or God. While modern age of human history began with the rediscovery of the Ionian theme and is known as the age of science or study of nature, contemporary age has witnessed the emergence of yet another area called cybernatics or the study of machines. The word 'science' would be understood in the sense in which it is usually taken when used without any qualification. When I say about this science that it was born blind, I do not mean to utter an oxymoron for some intended literary effect. It was a blind science because during its early period it preferred to remain blind to the consequences of a distinction of which it was fully aware and this is the distinction between matter and mind (and its cognates like the material and the mental or the physical and the psychical). True to its Greek legacy, science was not meant to discuss mind and, contrary to the same Greek legacy, however, it was not to discuss the origin of motion. Anyway, between the birth of science and till very recently we were used to the distinction between matter and mind on the one hand and between science of matter and phenomenology of mind, on the other. Starting in a low key with the emergence of experimental psychology, this science, grown very confident after many spectacular successes, has come back aggressively to conquer the area of the mental from which it kept

itself self-exiled for a long time. And, now we hear not only of cognitive science but also of cognitive engineering. It is, however, simultaneously felt by many that science is still not capable of answering the hard question of consciousness studies.

The second point to note is that it is very difficult to articulate fully and clearly the sense of the word 'consciousness', which is being used ambiguously. And, this stands very much in the way of a clearer understanding and successful exchange in interdisciplinary dialogue. What a neuro-scientist or a brain surgeon means by consciousness is not what host of others — say, a *Sāmkhya* or *Yoga* philosopher, or a practising *rajayogin* or an individual like Sri Aurobindo — mean by it. But, it is the former that is easier to make sense of for one who is born and bred, exclusively or mainly, in scientific culture. The reason is that the other sense of consciousness presupposes a distinction that is not as familiar in scientific culture as, we are often made to believe, in classical Indian culture. This other distinction, in addition to the familiar distinction between matter and mind, is between mind and spirit or between the psychical and the spiritual. This is not only a different distinction but is also believed to be a higher and deeper distinction.

The word deeper in this context does not seem to mean what the word means in the context of scientific search. Our deeper scientific search in the field of consciousness with the help of newly discovered and improved techniques and technologies is expected to bring into light more and more distinctions and increasingly finer correspondences with, say, the functioning of the brain. But, when a practitioner of spirituality dives deeper and deeper in his meditation he progressively discovers layers of consciousness with lesser and lesser distinctions. Lesser activity of the brain may be found to correspond to more intense spiritual awakening.

Consciousness in the context of this second distinction is still now widely believed to be a realm of the mystic. For a mystic the goal is to arrive at a consciousness that is supra-conceptual— where conceptual distinctions are all merged into a seamless transcendental consciousness that is in addition supra-relational,

un-owned or impersonal and unitary. It is believed that in the tradition of mysticism—which has a far longer history than the scientific tradition—many have already experienced or rather reached this consciousness. So, in one of the senses of it the deeper search of consciousness is already complete. What we can do best is to collect, second hand, some data, which some of the mystics have obtained first hand through their introspective or still deeper methodology and use them for setting a few targets for the scientists to achieve. One such target is to discover, using their own methodology and third person approach, this seamless consciousness, another is to improve upon, if the need is felt, the current definition of consciousness or to redefine the word consciousness in their literature. When some of us proposed during the seminar on consciousness organised by the Ramakrishna Mission Institute of Culture, in 2002 that we should associate and communicate with some genuine and committed practitioners of spirituality we, at least I, envisaged that it would be possible, through using relevant data obtained by using different methods and comparing and correlating them, to formulate, some more concrete programme and questions. I propose to discuss below one such question.

Between the mystics and the scientists there are philosophers. Many philosophical traditions are as old as mystic traditions and much older than the history of scientific study of consciousness. So, it is quite natural that the scientists who find it necessary to understand consciousness that is implicated in the very procedure of today's science, say, should turn to philosophical traditions for the purpose. But, in spite of the fact these two old traditions of the mystics and the philosophers are distinct, many have a tendency to confuse between philosopher's search and doctrine of consciousness and those of the mystics. For example, not only the spiritual practices prevalent in the traditions of *Yoga*, *Advaita Vedanta* and *Bauddha* but also the corresponding doctrines of consciousness are referred to as mysticism. One reason for referring to a system as a form of mysticism, in the context of the

phenomenon of consciousness is that in it a distinction is (or is believed to be) drawn between the psychical and the spiritual and that it is held that the spiritual consciousness is the transcendental, impersonal and un-owned consciousness. It is to be noted that even with their improved techniques, sciences cannot reach this deeper consciousness nor can they clearly understand it. Therefore, even deeper scientific search can hardly take us to the deeper consciousness, that is, the transcendental and spiritual consciousness as distinct from the psychical consciousness. It would be a useless pastime to guess whether or not in near or far off future that too would be possible for science to do. For, it is feared that the very concept of science would be radically changed in the process. So, if by deeper scientific search of consciousness we mean search of spiritual consciousness with the improved techniques, etc. of science and from the interdisciplinary scientific approach, then that does not seem to be possible. What, however, many scientists seem to be confident about is that they can scientifically study what is called psychic consciousness; it is believed that, without getting lost in the long debated issue of reductionism, we can, with improved techniques, investigate into many minute correspondences between neural functions and psychical conscious states. Such subtler states and functions as well as the correspondences in question are hard data of scientific investigation and hence cannot be denied.

One task that remains to be done is to study critically the implications of these new discoveries. Do they imply either that the physical is the cause of the mental? Do they further imply that it would be a worthwhile scientific task to study whether along the same line we can find the physical to be caused by the mental? Further, do the recent scientific findings amount to establishing that the brain is the *seat of consciousness*? Besides raising and discussing such questions which arise because of the progress of individual sciences in recent times in the field of the study of consciousness and data collected in course of collective scientific study in the matter, we can do another thing. We can make it

possible to open a meaningful exchange between philosophers, who have earned lot of expertise in handling the phenomenon of consciousness during their very long tradition of search of consciousness, and recent scientists who are initiators of a new scientific tradition of consciousness study. For that we need to be able to formulate some concrete questions and problems or concretize some questions that are being asked for a long time in somewhat vague generality. We can illustrate both of these with the example of philosophy of *Nyāya* if we care to reconstruct the relevant views of the *Nyāya* philosophy — its formulation of and response to the relevant questions.

One should not hastily think that the reason why it seems easier to establish collaboration between scientific tradition and the tradition of *Nyāya* philosophy is that *Nyāya* admits a distinction between the psychic and the spiritual or that it admits a spiritual consciousness over and above the psychical consciousness. For, contrary to popular belief and understanding, philosophies of *Yoga* and *Vedānta* or related practices have nothing mystical about them. These philosophies also do not admit a spiritual consciousness over and above a psychical consciousness in the sense of admitting that there are two sorts of consciousness each of which is distinct from the material.

II

Philosophy, unlike science, has been studying the phenomenon of consciousness for a very long time. History of different cultures will testify to the truth of this remark. But, only in recent times empirical investigations conducted in neurosciences have established detailed correspondences between consciousness and the workings of the brain. This encourages one to think that the brain may be the seat of consciousness; and this in its turn tends to make one sanguine that a scientific understanding of consciousness (as distinct from the widely shared 'understanding' which is hardly anything more than folk psychology) may be attained now. But, it is interesting to note that people are still not ready to say that the

identified brain processes are the *causes* of the corresponding states of consciousness. There arises the question, "Is there anything *between* the cause and the correlate?" or "What *more* than regular correlation with the effect is there in a cause?"

The *Nyāya* school of Indian philosophy has been advocating for a long time a certain theory of 'mind' and consciousness in which the *Naiyāyika*-s used three interrelated but distinct notions of cause (*kāraṇa*) seat (*āśraya*) and *āyatana*. This *āyatana* in relation to consciousness is body. While they thus talk of body they do not talk much about brain (or *mastiṣka*, say). On the other hand, they postulate another entity *manas* or 'mind' as distinct from both 'Mind' (or soul) and brain. *Their view may be construed as bearing the suggestion that body including brain does have a close correlation with consciousness. But, such a correlation shows at most that the body or the brain is the 'āyatana' of consciousness but not the seat or the cause of it.*

This way of constructing the *Nyāya* view in the matter can serve two purposes at the same time. It can enable us to incorporate in the classical *Nyāya* account of consciousness the role, which, according to recent scientific findings, brain matter plays in the appearance of consciousness. On the other hand it can enable us to accept the recent scientific discoveries without thereby committing us to the view that brain is the *seat* of consciousness — a view, which tends to lend strong support to physicalistic reduction. It may be possible to say then that at least in some cases we find that correlate is not the cause (*kāraṇa*) of the phenomenon in question but its *āyatana*. This in its turn may enable us to accommodate most of the major points in the different standard theories of consciousness within a non-reductionistic realistic framework.

III

Thinkers who are engaged in the consciousness studies today include both scholars belonging to the same culture but different intellectual disciplines and scholars from 'same' discipline but belonging to different cultures. Objections are often raised against

culture-based distinctions of intellectual disciplines. But ,one can hardly avoid it without sacrificing objectivity and honesty when one notes that certain problems, which are almost inseparably connected with certain cultures (at least, in certain phases of it), are conspicuous by their absence in certain other cultures. Sometimes such absences turn out to be very instructive. Keeping this in mind and having noted that certain contemporary problems about consciousness did not bother them, I propose to present certain relevant views of some Indian philosophers of classical period as a response to the same issue being hotly debated today in the West and, in fact, everywhere.

One of the likely reasons why in the recorded history of Indian (philosophical) thought there is no evidence of any great awareness of what is known as mind-body problem is that, in India, there have been a good number of confirmed spiritual monists and confirmed dualists but there have not been many equally confirmed and equally strong (I mean, in intellectual acumen and conviction) material monists.

Be that as it may, Indian thought[1] has so far contributed (almost) nothing[2] to the detection of many interrelated problems about consciousness including the question about the seat of consciousness (as well as many attempted solutions of these problems) that we discuss today. Both the problems and their (tentative) solutions belong to modern scientific culture, or, more particularly, to certain recent developments in different branches of science and technology of that culture. But, this may be a sign of strength or intellectual maturity of Indian systems of thought, some inbuilt measures of which did not perhaps leave any scope for such problems to arise. If this is true, then a study of the classical Indian thought in the matter can shed some light on the current controversies about consciousness. Again, if this actually turns out to be the case, then what is still now a guess will become a confirmed truth. The reason why it is not already known whether it is only a wishful thinking or actual truth is that we do not know classical Indian thought as much as we know modern Western thought including modern science and philosophy.

How can we explain why Indian thinkers did not entertain the question, "How all the properties and functions we associate with mind might be explained in purely mechanical terms?" We think that some of them at least formulated and defended dualism so successfully that there was no scope for such questions to be raised. But, why did they not show any interest in the question regarding the relation between brain and consciousness or why did they not ask what was the seat of consciousness? It is well documented that ancient and medieval Indian scholars had deep and detailed knowledge of human biology and anatomy and probably also of physiology.[3]

There is another problem also. In matters of detail, contemporary scientists have enormously more and more advanced knowledge than the Indians of the classical period. With newer and newer techniques and technologies, they know so much more about the structure and functions of the brain, which, we have no good reason to deny, accompany various conscious operations. And, yet many of them prefer to *say no more than* that they now know minute details about *correspondences* between specific functions of the brain – activation of particular regions of brain matter – and *correlated* states of consciousness. One wonders why they keep such a low profile and do not make the stronger and bolder claim that they now know what causes consciousness or what is the seat of consciousness. Such a definite answer would have by now set at rest the doubt whether science could know consciousness or whether a *scientific causal explanation* of consciousness is possible. That they are professionally cautious and they feel the need to be doubly so, in view of the fact that in the past claims made too early turned out to be false, is not the whole explanation. It seems to us that these scientists are aware that still something is missing. There is need for suitable theories of causality, matter and consciousness, which can enable them to assert causal relation between correlated states and functions of the brain, on the one hand, and consciousness or conscious states, on the other. But, such theories are just what is not available in the

modern scientific culture. However, scholars of different schools of thought in India developed, or at any rate, used to subscribe to such theory. The *Nyāya-Vaiśeṣika* school can claim the credit of having developed a philosophical theory of the sort, which is needed. In what follows, I will present or reconstruct some relevant aspects of their theory of consciousness or part thereof. I will present them in the form of response to certain current thoughts and debates regarding the nature, location, etc. of consciousness.

IV

Two of the greatest and interrelated foundational innovations, which marked the beginning of the modern scientific age of European history, are (i) the conception of science as autonomous and independent of Greek metaphysics and (ii) the introduction of Cartesian dualism. These taken together made it possible to have a truly *empirical* (scientific) study of material nature in isolation from the phenomenon of mind and hence from all moral and spiritual concerns of life.

Philosophers and men of great acumen had no difficulty in detecting that the fall out of Cartesian dualism was skepticism or doubt about the possibility of science or success of scientific enterprise. This came to be known in philosophical literature as one of the modern forms of skepticism, namely, the skepticism about external world. The working scientists did not give any importance to this skepticism and remained unaffected by it and they eventually achieved phenomenal success in their field. As a result, there evolved a new ideology called scientism, which contends overtly or covertly that science is the whole of human knowledge.[4] It was soon converted to mean that if there is anything, any x, capable of being known and worth knowing then science could know it in principle. Some practical difficulty, such as, lack of necessary equipments or experimental facilities could delay the growth of science of x, but that only shows the practical limitation of science; there is no theoretical limitation. A sort of hope was already there that science of consciousness was possible. New

developments in biology, neurosciences and computer engineering brought great anticipations. With tremendous courage, science turned its attention to consciousness. And, a new urgency for scientific understanding of consciousness was felt when new developments in physics brought out clearly that consciousness was implicated in the very procedure of science – a fact that may appear to be a sort of irony. For, science wanted to study nature in isolation and without any reference to intentional phenomena.

Cartesian dualism was introduced with the emphatic reaffirmation and demonstration of the Socratic theme that existence of consciousness was primal certainty. Even independent of it, no man ever doubted the phenomenon of consciousness or his own existence. And, philosophers of different cultures have been studying this phenomenon from long past, so much so that a number of major alternative theories are already there. And, if still scientists are almost at a loss to understand consciousness, then they must be seeking a different type of understanding or are trying to understand the phenomenon in question in some other sense. As ordinary men or in the ordinary sense, they themselves are aware that consciousness is and has always been there. It is also known that no science could begin unless there are *experienced* data to theorize about and that scientific enterprise ends with the sought for *understanding* of the phenomenon being studied. What is lacking, however, is *scientific* intelligibility. Given this fact and the hope and confidence we discussed above, it is but quite natural why there should be today so much discussion on or about consciousness – about its nature, genesis, seat, etc. We will be concerned here with the question of the seat of consciousness only.

Any rigorous discussion of a certain phenomenon should ideally start with a definition or precise description of it. And, the problem starts right from here. Sometimes consciousness is equated with some of the behaviour we associate with it as its manifestation. Consciousness accompanies such intelligent behaviour as calculating, editing, processing, etc.and in this they are considered

to be different from such other processes as, say, eruption of volcano, photosynthesis in plants or even growth and decay of cells in a living human body. What is this consciousness that accompanies those processes inside a human organism, which do not 'go in the dark'? We will not attempt here to deal with the questions of definition and nature of consciousness separately. Our discussion of the question of location of consciousness will shed some light on this question as well.

Where does consciousness reside? If consciousness is, it must be somewhere and further, everyone is aware that it is inside oneself. And, if it is inside the body, enough experimental evidences are there to suggest that the seat of consciousness is the brain.

We also need to discuss if and how the following two questions are related: 'Is brain the seat of consciousness?' and 'Do brain processes cause consciousness?' Scientists are hesitant to return an affirmative answer to the second question and Indian philosophers of the classical time were not in a position to offer either an affirmative or a negative answer to it for relevant experimental data or evidences, which are available today, were unknown in their time. So, it may be urged that there is no scope for a response to a modern thesis or controversy regarding the location of consciousness from the point of view of early Indian philosophers in general or the *Naiyāyika*-s in particular. It may be said in reply that the very fact that the *Naiyāyika*-s could develop a complete theory of consciousness without facing at any stage or, at least, leaving as unresolved the problem of its location, may as well suggest that there is some way to avoid this problem or answer it satisfactorily. One such way is critical philosophical examination and analysis.

V

It may be said that in their own way the *Naiyāyika*-s also considered the question about the location of consciousness. They believed that consciousness did not exist in the external world or in space. But, they could not say where inside the body

consciousness existed. Let us consider the relevant part of the *Nyāya* theory of consciousness.[5] It cannot be doubted that consciousness *is* and we believe and speak accordingly. And, if consciousness is, it must be somewhere. To say, something is nowhere is another way of saying that it is not. In other words, the question of location is supported by common sense experience and usages. A *Naiyāyika* would, however, insist on the need for examining the sort of usage '*x* is'. Sometimes the expression 'is' is short for 'is in...' or 'is on...' and the like. If someone says 'Bring me the story book, it is...', then we take the utterance to be incomplete and is waiting to be completed by additional words like 'on the table'. But sometimes the expression 'is' has no such implication; and the expression '*x* is' may very well be a complete utterance. In such contexts 'is' is replaceable by 'exists' or 'real'. It is in this sense of 'is' that a theist would assert, 'God is.' It may not be said that to be or to be real, a thing must exist in space or time; so, we cannot say that in such usages the word 'is' bears implication regarding location. For, when we assert, 'Space is' or 'Time is' there is no such implication that space or time is in space or time. Further, things like tables and chairs are said to be both in space and in time. How can that be unless space is in time or time is in space? Thus, there are uses of it where 'is' does not imply location. Examples of such usages are 'Space is', 'Time is', '*ghatah san*', etc. To say 'Consciousness is' is not to imply necessarily that it has, in any ordinary sense at least, a location. In this sense something which exists everywhere or does not have a specific location is not located at all. So, it is said that infinite substances do not have location, they are ever non-located or are not *dharma* or *ādheya.*

There are, however usages which necessarily imply location. If instead of saying '*x* is' we say '*x* inheres' then one can legitimately ask on every such occasion 'Inheres, where?' or 'Where does it inhere?' Thus, unlike the utterance '*x* is', the utterance '*x* inheres' is necessarily incomplete and is to be completed by adding name of things or places where *x* is or can be located. The incomplete utterance, say, 'colour red inheres...' is turned into a complete

utterance by adding the words, say, 'in the (red) rose'. So far as consciousness is concerned the *Naiyāyika*-s say both that 'consciousness is' (*jñānam asti*) like 'time is' (*kalo asti*) and that 'consciousness inheres' (*samavetam jñānam*).

One may say at this point that unlike *Vedantin*-s, *Naiyayika*-s, are committed to holding that consciousness has location. And, if further they do not say specifically that it is located in the brain, then they have left their theory incomplete. If, on the other hand, they say that consciousness is located inside the body in a place other than the brain, then they have evidently propounded a wrong theory.

Let us first ask what connects the belief 'consciousness is located somewhere' to the belief 'it is located inside one's body'. It is the other belief that consciousness is something which is not external. One popular way of explaining what it means to say that something is external or the usual way of distinguishing something that is external from what is not external is to say that what is outside one's body is external and what is inside one's body is internal. But, this makes externality and internality relative. Besides, it accords same status to an organ, like heart or lung, and experience like perception or memory. But one's internal organ is not internal in the same sense of the term in which one's states of thinking and feeling are internal.

Another way of explaining the matter is there. What is not external is not in space; it is only in time (provided, of course, it is real). Spatiality is the criterion of externality and exclusive temporality is the criterion of internality. Now, we can say that even inside one's body there are both external things, like the organ of heart or stomach, and internal phenomena, like thoughts and feelings. This, however, reaffirms, but does not explain the position that consciousness is an internal phenomenon. The *Nyāya* way of distinguishing these two sorts of phenomena is far more satisfactory. For, we find here an independent criterion and a sense of external, and at the same time, a way of avoiding the type of problems noted above. According to a *Naiyāyika* a thing is external

if it is an object of external perception or is the 'seat' of something that is externally perceived (perceivable). This second clause takes care of those external things that are themselves imperceptible, either conditionally or in principle. When can we say of a thing that it is internal? Well, that which is not external is internal. But, what are we supposed to understand by external perception or what does it mean for a thing to be perceived externally? Well, it means perceived through one or more of the following five (external) sense-organs of: vision, taste, touch, hearing, and smell.[6]

One important thing to note is that what is internal in this sense can without contradiction be said to have spatial dimension. We can and do say that pain is in my right leg or in the canine tooth and the like. We can also say that the internal spiritual substance of soul is infinite and, as such, stands distinguished from various kinds of things, the magnitude of which is admittedly finite. Things like tables and chairs, on the one hand, and physical 'atoms' (*paramāṇu*) of any one of the first four elements, i.e., *bhūta*, on the other, are examples of finite substance.

Naiyāyika-s are well aware of the fact that the popular view is that our conscious states exist inside our body. Further, they make reference to body (*śarira*) in their theory of consciousness. But, they do so not to explain the fact that consciousness is felt as, or is believed to be somehow, within us or that it is internal. For them, consciousness is internal because it is located in a substance that is internal. Since its locus substance is internal or is devoid of *any* property that can be perceived through external sense-organ or organs, consciousness must also be internal. Consciousness could not have been, strictly speaking, an internal phenomenon if it were located just inside the body, say, in the brain. So, even if *Naiyāyika*-s had a detailed knowledge of the functioning of the brain and the way various functions of the brain are correlated with conscious states, they would not have located consciousness in the brain. For, that would have violated the evidences of common sense experience and usage which uniformly show that consciousness is an internal phenomenon. Of course, ordinary

men have no refined criterion of 'being internal' which could organize consistently all the relevant experiences and usages. It is the task of philosophy to provide such a criterion, and the philosophy of *Nyāya* discharged the obligation admirably. Even though, as a matter of fact, *Naiyāyika*-s of classical age lacked very advanced knowledge of the structure and functions of the brain that should not be construed to be the reason why they did not say that brain was the seat of consciousness.

VI

Consciousness is an internal phenomenon and it has its location. These leave many questions unanswered. Where is it located? If it is perceived, how does it get perceived? Many such questions are to be answered still.

Let us continue with the theme of location. The talk about location is somewhat metaphorical. Can we unpack this metaphor? In the first place, to say consciousness is located in *x*, is to say *x has* consciousness or that *x possesses* consciousness. The implication is that we are talking about consciousness as *owned* or possessed by someone or something. Transcendental consciousness of the *Vedāntin* is unowned consciousness. The *Naiyāyika*-s do not admit such a consciousness. They do make a distinction between two varieties of owned consciousness: owned consciousness which is eternal and hence uncaused, and owned consciousness that is caused and non-eternal. But, they are strong supporters of ownership theory of consciousness. Be that as it may, when we say that consciousness is located, we obviously hint at some relation between consciousness and where or in which it is located (or in this case, its owner). But, the point to note is that, to say about an *F*, that it is located, is not simply to say that it is somehow related to something. We find that there is some relation between consciousness and things like tables and chairs. But, certainly consciousness on that account cannot be said to be located in these things. There is a distinction between mere relatedness (*sambandhatva*) and being located (*āśritatva*).

Located-location relation (*ādhara-ādheya-bhāva-sambandha*) is a stronger tie than, say, the relation of mere juxtaposition. There are about four relations which can tie things as locus-located. Among these, conjunction (*samyoga*) and inherence (*samavāya*) are two. And, here we will confine ourselves to these two only. So, in this context, if one says that *F* is located in *x*, it would mean that *F* is conjoined with *x* or that *F* inheres in *x*.[7] When one says about an *F* that it is in or stands conjoined to *x*, i.e., *F* exists in the relation of conjunction in or on *x*, it sometimes makes sense to ask where in *x*, in which part of *x*, does *F* exist in the relation of conjunction? But, the nature of the relation of *samavāya* or inherence is such that such questions make no sense. If *F* happens to exist in *x* in the relation of inherence, we cannot say (or ask) where in *x* or in which part of *x* does *F* inhere. Where in milk, in which part of it, does the taste of milk reside? Where in man, in which part of him, does manhood inhere? When we say, a horse is running fast, do we say that any particular part of the horse is running? Wherever consciousness may be located in the sense of existing in the relation of inherence, it must be located in the whole of that locus. If it is in me, i.e., located or inheres in me, then it is in the whole of me and not in any particular part of me. If I am a man, I am a man all over just as an ocean is ocean all over. Now, when one says, one is conscious, what is meant is that one has consciousness inhering in him. One who is conscious in this sense is conscious all over and not in any part of him. If on the other hand, even one part of his body, say, the nails are not conscious, i.e., lacks inhering consciousness then the body is not conscious at all; consciousness is not located (anywhere) in the body. It makes no sense to say that it inheres in one part of the body and not in another part of it.

A thing can exist in its locus partly; i.e., it can exist only in certain part or parts of its locus if it exists there in the relation of conjunction. This is one of the ways in which two relations in question which define or determine locus-located character (*ādhara-ādheya-bhāva*) are distinguished. The relation of conjunction determines incomplete locus or incomplete occurrence

in a locus (*avyāpyavṛttitva*), whereas inherence determines complete occurrence (*vyāpyavṛttitva*) of a thing in its locus. We can as well put it in this way, conjunction of a thing is available or occurs only in part or parts of its locus, whereas inherence of a thing is available everywhere in the relevant locus. Things which have parts (or are of a kind which have parts) are ideal terms or candidates for the relation of conjunction to obtain in pairs of them. Only substances, some substances, are such things.

Anyway, consciousness does have a location but in the whole of that locus it inheres, i.e., exists in the relation of inherence. For a thing to be located in this sense is not incompatible with its existing everywhere. If the thing in which consciousness inheres is infinite in its magnitude then consciousness is everywhere. But, to say this is not to commit oneself to accepting panpsychism. For, one can still say, consciousness is not in a stone or that a flower is not conscious. For, things inhere everywhere of their locus only, i.e., in the whole of their own locus and not outside their locus also.

The locus in which consciousness is located or inheres is the infinite spiritual substance called self (*ātmā*). Though an infinite substance, self is not divisible or made out of parts. Consciousness inheres (that is located or exists in the relation of inherence) in this self – in the whole of it. It cannot be said to exist or be located in me in the relation of conjunction, because I do not and I cannot say that some parts of I are conscious and other parts of I are not conscious. One can be partly paralytic – a part of him may be paralysed – but one cannot be partly conscious. Consciousness, on the other hand, cannot be said to inhere in things like brain, things which are other than self, because in that case consciousness could not have been something internal, it might have been external or physical.

So far we find no place for body or brain in the theory of consciousness we are reconstructing. But, reference to it may be necessary if we are to explain the other commonly accepted features of consciousness, namely, that it is subjective and it is private. Sometimes these two words are used interchangeably,

but private chamber or car of a person is not subjective. Anyway, consciousness is private, for different individuals or persons or selves do not share it. One's consciousness is one's exclusive possession; by contrast one's class character is necessarily shared by at least one other individual of his own kind. One's skin or one's body may also be private in this sense, but these things are not subjective on that account. Consciousness is subjective in the sense that it is directly accessible to, i.e., perceivable by the individual who possesses it. In other words, an individual can perceive only his own internal states of consciousness.[8]

We have seen so far that consciousness is an internal phenomenon which is located everywhere in the infinite self which is its sole possessor or owner, and which alone can perceive this consciousness. It is one thing to know what is meant by saying that consciousness is private or subjective and it is another thing to be able to explain these features of consciousness. Why does one individual only posseses it and why is it perceived by only the individual who possesses it? Answers to these questions should be possible to be integrated to the scientific causal theory of consciousness. The general theory of location gets integrated to the causal account of consciousness in case we are talking about the location of occurring things or events. A red colour is located (inheres) in a particular rose because that particular rose is cause (one among many causal factors) of that red colour and further when produced, that red colour inheres in that rose. In the causal genesis of certain state of consciousness, certain *particular* self plays the role of (the inhering) cause. There are many other things also which take part in the causal genesis of that state, but when produced, the state of consciousness inheres in the particular self-substance only which causes it.[9] And, there are good reasons for believing that every such self is different from every other self. One such reason is that every self is related in a special way to one single body. In that relation, the self in question does not stand to any other body or self or, for that matter, to anything else. Different bodies (say, human bodies) are recognizably different.

And, since each (empirical or phenomenal) self (i.e., each self in its state of phenomenal existence) is uniquely related to a single body, every embodied self is a private individual.[10] And, because a state of consciousness inheres in the private self, which along with other factors causes it, every state of consciousness is private.

There still remains a question. What is this unique relation of a self to its body? It cannot be conjunction. For, as infinite substance, every self stands conjoined to every substance including all human bodies, i.e., all the bodies of all men (which have only finite magnitude).[11] It cannot be inherence either for the following reason. Human body is a substance of finite magnitude and self is a substance of infinite magnitude. An infinite substance does not inhere in any substance and no substance inheres in an infinite substance. Thus, besides standing in relation of conjunction to every *śarīra*, a self stands in relation to only one of these bodies (*śarīra*-s) in a unique way. And, this makes the (embodied) self a private being or individual. Before returning to the question, "What this special relation is?", we may as well take note of another principle of individuation in the context of selves. Experiences of different selves are recognizably different. These differences, in their experiences, are what makes every self different from every other self and makes it a private being.

These experiences are of two types mainly, cognitive experience and affective experience. Some of these affective experiences – immediate experience of pleasure and pain, i.e., *bhoga* or *sukha-duhkha-sākṣātkāra* – are the effect of certain cause of which the body that individuates the self in question and to which this self is related uniquely is also the effect. These causal factors may be called private causal factors.[12] A body that enables us to differentiate in theory one self from another and which owes its origin to the same factors which accounts for the exclusive affective experiences of that self, may be said to explain why conscious experiences are private. Such experiences are produced in a self in so far as the self is related specially to a particular body. A body that is related to self in this way is called, for that reason, *āyatana*

of experiences of pleasure and pain, i.e., *bhogāyatana*. A self has certain experiences in so far as it is uniquely related to a body which, therefore, is called *its bhogāyatana*.

A self has experiences of pleasure and pain in so far as it is embodied and the body in question and the experiences in question owe their origin to certain common causal factors. The idea is this; a certain type of body and some specific relation to this type of body is necessary if the self has to have a certain type of experience. Reference to body is necessary if we are to explain the fact that self has experience and this experience is private to that self. If another self were to have these experiences then it also would have to be embodied in the same body and ultimately would be indistinguishable from the first self. The role, which a body plays in explaining the privacy of experience, as we understand it here, is to be distinguished from some other role of it to be discussed presently. The role just described may be described as the role of making it possible for the body to have experience at all. Thus, to explain the mere possibility of experience as well as to explain partly the type of experience a self exclusively has, we need to make reference to the body in which it is embodied, i.e., especially related and not related by way of inherence (or even conjunction).

We have so far concentrated on the affective side of experience or experience of pleasure and pain in respect of which experiencing individuals differ from one another.[13] We need to refer to *śarīra* also to explain the cognitive side of experiences of the self. A self cognizes both external objects and its own internal states. When a self experiences directly its own conscious states, it is not only the (passive) seat or locus of those states but also, so to say, an active knower. Not only the states cognized are private possessions of the knowing self, but at least, some of the conditions of knowing them are also private or exclusive. By means of these conditions, one particular self can know its own internal states only. These states are therefore doubly private — they are produced exclusively in one particular self and is perceived exclusively by that self; we can also say that they are located exclusively in one

self and are the content of the further experiences which are similarly located.

But, for all that consciousness is not embodied; the self is embodied. Again, it is embodied not in the sense that it is inside the body in the way a ball may be put in a box. An infinite self is embodied in a finite body in the sense of standing to it in a specific way or in a certain relation which is or explains the very possibility of experiences, both affective and cognitive. But, these experiences are not processes or events that go or remain in the dark like the process of digestion or metabolism. These are revealed to the self which possesses them, whether at the time of their occurrence or sometimes later. These experiences are there in the whole of the infinite self, but self detects their presence with the help of the body or some detecting organ inside the body. So, the body, with its internal structure of brain, nervous system, etc. and equipped with *manas*, functions as the detector or manifesting medium of consciousness. It is not the seat of consciousness and nor for that matter the knower of consciousness. It is not a cause of consciousness directly. At this stage, it is necessary to discuss the sophisticated theory of cause which the *Naiyāyika*-s have developed. But, that would require another occasion and a separate paper.

References:

[1] I mean, 'classical Indian thought' almost for the same reason for which Professor Gopinath Bhattacharya said, "Strictly speaking, in the field of analytic thinking or in outlook, there is hardly much that is 'modern' and Indian at the same time". See his *Essays in Analytical Philosophy*, Sanskrit Pustak Bhandar, Calcutta, 1989, p.141

[2] This is not to deny that though Indian philosophers did not raise this question yet certain implications of their theory of consciousness, developed independently of any explicit awareness of this problem, may have bearing on the better understanding and solution of it as it is raised and discussed today.

[3] See P. Bhargav and C. Chakravarti. For their knowledge in other branches of science, see C.K. Majumdar.

[4] Putnam, H., *Mathematics, Matter and Method*: Philosophical Papers, Volume I, Cambridge University Press 1975/79, Introduction, p.xiii

[5] We present here a brief and faithful reconstruction of *Nyāya* view of consciousness or some aspects of it.

[6] Why any one of these sense-organs does not perceive internal phenomena? We must have some independent criterion to decide which objects are perceived by these five sense-organs and which are not. And, the *Naiyāyika*-s have such a criterion.

[7] We leave out the discussion why we ignore the possibility of x inhering in F. This much may be mentioned that we do not suggest that x itself cannot inhere in something or be located, in this sense, somewhere.

[8] It will not be wise to jump to the conclusion that third person methodology is wholly inapplicable when the object of study is subjective consciousness. For, the same consciousness which is directly perceived by its private owner can also be known indirectly, though not necessarily on the basis of the report of the owner, by other individuals. But, in order to be able to access indirectly consciousness possessed by others, one must be able to directly perceive one's own consciousness and how one's different conscious states are related to one's overt bodily movements and actions.

[9] Here, we have arrived at the limit of explanation. We cannot perhaps say anything more if one asks us why state of consciousness when produced resides in the self that causes it and nowhere else, in no other substance nor even in those substances which along with the self take part in the genesis of it. Can we say, it is the very *nature* of the thing thus produced to inhere in the self? Even if we can answer the question by saying that after all consciousness as a quality must inhere in some substance and two other substances which are somehow involved in the genesis of the state – *manas* and *śarīra*– cannot have it in the relation of inherence for the following reasons, one may continue to demand additional argument, why it inheres in the self. If no cogent answer is possible, then one may say that since in none of the three possible substances consciousness can inhere, it is a spurious property. Consciousness is nothing real. Anyway, a state of consciousness cannot inhere in the body, for it is something internal and it cannot inhere in the *manas* because it is directly perceived. And, if by such eliminative arguments consciousness, a quality, is proved to exist in the only other possible substance, self, then that only shows that we have reached the limit of explanation. And, we must admit that however far we may go in explaining things, there must be some limit beyond which our explanation cannot go.

[10] In its non-phenomenal state also every self is different from every other self. The principle of individuation in such a state is necessarily different from what we use to individuate phenomenal selves. And, the ultimate principle of individuation of some other substances is applicable to selves in their non-phenomenal state.

[11] Infinite magnitude is not necessarily a spatial property. Things that are non-spatial in the sense that they do not stand related to space by way of conjunction or inherence can still bear relation of conjunction to things that are clearly spatial. When a non-spatial substance like space, time, and self stands related by way of conjunction to every substance which has finite magnitude (and so are spatial), it is called infinite.

[12] Though another person may have causal factors of the similar *kind,* he cannot have the same particular causes. In other words there are some factors which (causally) produce both a body to which a particular self is related uniquely and some of the affective experiences which that self alone has.

[13] Individual differences in (the experience of) pleasure and pain are observed facts. So, even when presented with the same object, two individuals are sometimes found to react differently – one is pleased and the other is displeased.

Vibrations and Forms

RALPH ABRAHAM

1. Introduction

My main goal in this paper is to give an idea, especially a visual idea, of my experiments with vibrations and forms in consciousness, over the past thirty years. The visual representations, computer graphic animations, may be best understood in the context of my personal experiences in actual consciousness exploration during the years 1967 to 1972 which motivated the work, and the philosophical frames, or maps of consciousness, in which I am trying to understand my experiences. These maps are based jointly on my own experiences, and on the philosophies of Greek, Jewish, and Indian origins. I must thank Dr. Paul Lee for his tutelage on the Platonic and Neoplatonic philosophies of the Greek tradition, Dr. Sen Sharma for his explanations of the Kashmiri Shaivism or Trika philosophy and other features of the Indian tradition, and Swami Prabhananda and the Ramakrishna Mission Institute of Culture for extraordinary hospitality during my month-long stay in Calcutta, and the privilege of attending this fascinating meeting.

2. Personal Experiences of Vibrations and Forms in Actual Consciousness, 1967-1972

My story begins in 1967, when I was a professor of mathematics at Princeton University. This is a wonderful university, especially for mathematics, and I was privileged to have colleagues and undergraduate and graduate students, whom I remember fondly to this day. Also, the 1960s was the time of student political unrest, and concomitantly, the time of the Beatles, and the Hip Subculture, or 'sex, drugs, and rock and roll', as they used to say.

My wonderful students were involved in both of these popular movements, and through them, I also became involved.

In 1967, the three notorious and defrocked psychology professors of Harvard University—Timothy Leary, Richard Alpert (later aka Baba Ram Dass), and Ralph Metzner—were brainstorming about the USA plumping the powers of LSD as an agent of spiritual growth.

Leary, under the influence of Vedanta and Gayatri Devi of Los Angeles, used to affect Indian dress, and hold forth on Eastern philosophies. I heard their performance in the Lower East Side of New York City, and decided to try LSD and see for myself. One of my undergraduate students helped me onto the path, and my first experience was an epiphany indeed.

Through this epiphany, I became fascinated with the exploration of consciousness, as we called this path, and continued the work in irregular episodes as I followed my career to the University of California at Santa Cruz in 1968, and subsequently to Amsterdam, to Paris, and to Nainital in the Himalayan foothills. In 1973, I returned to Santa Cruz, and migrated from personal explorations back to academic research on consciousness, chaos theory, and other concerns. My walkabout of five years was over, but was to have a lasting effect on all aspects of my life. I had had hundreds of meditations of the sort practised in *Yoga Nidra,* that is, lying prone through the night, in the so-called fourth state of consciousness, and amplified by small doses (e.g., 25 mg) of LSD. (Saraswati, 1998) Like *Yoga Nidra* meditation, the LSD experience provides a trip to the fourth state lasting typically about eight hours, during which sleep is held at bay. These sessions were usually done alone, but sometimes in teams of from two up to a dozen or so others, flying, so we thought, in group formation like a flock of birds. Marijuana use was ubiquitous during this period, but in my experience it made no important contribution to my research, and, generally, I avoided it.

At one time, around 1969, we used large doses of DMT, and this period was crucially important to the whole evolution of my mathematical understanding of consciousness, based on geometry,

topology, nonlinear dynamics, and the theory of vibrating waves. For, in these experiments, although lasting only a few minutes, the reciprocal processes of vibrations producing forms and forms producing vibrations were clearly perceived in abstract visual fields.

Our perspective during this time and later, was gnostic. That is, we rejected teachers and teachings, and sought to discover cosmology for ourselves. Throughout this period, most of us in the Hip Subculture were apprenticing ourselves to teachers of ancient traditions from East, Mideast, and the West, sharing our experiences, travelling to faraway lands to find teachings, and so on. Teachers travelled through California, and we circled the globe in search of them.

Personally, I experienced yoga, martial arts (judo and aikido), prehistoric moon rituals, musical meditations, fasting and strict diets (e.g., macrobiotics), and Native American ceremonies. This was the background of my interest in vibrations and forms in the field of consciousness.

3. My Miracle Year, 1972

This final year of my walkabout was blessed with two special learning experiences, one in Paris at the beginning of the year, the other in the Himalayan foothills, in Summer and Fall.

3a. Winter 1972, Paris

This was the final year of my walkabout, following which I returned to ordinary reality and my post at the University of California at Santa Cruz, an arduous process taking about a year. I began 1972 as a visiting professor at the University of Amsterdam, teaching catastrophe theory. At the same time, I had a visiting position at the Institut des Hautes Etudes Scientifiques (IHES) at Bures-sur-Yvette outside Paris. I used to commute weekly on the train, which I loved. At this time, IHES was newly formed, and had only two permanent professors, David Ruelle and Rene Thom, both of whom were superb. Thom was one of the great mathematicians of the 20th century, and had received

the Fields Medal at the International Congress of Mathematicians in 1956 for his work in differential topology. I had met him in 1960 in Berkeley, where we began working together on the foundations of catastrophe theory. During 1966, I had written my first books, *Foundations of Mechanics*, *Transversal Mappings and Flows*, and *Linear and Multilinear Algebra*, while Rene had written his foundational work on catastrophe theory, *Structural Stability and Morphogenesis*, which I arranged to have published by my publisher, Bill Benjamin.

Early in 1972, Rene and I were both stymied in our work and were browsing the borderlines of science looking for clues. I had been reading Kurt Lewin on topological psychology, and on arriving at IHES one day, I asked Rene what he was working on. He pulled a book from his desk and began showing me photo after photo of familiar forms from nature: spiral galaxies, cell mitosis, sand dunes, and so on. These forms, he said, had been photographed in vibrating water. The book was *Kymatik*, by Hans Jenny, a medical doctor from Dornach, a suburb of Basel, Switzerland. I was thunderstruck to see images from my meditations on the pages of a book, especially in support of the vibration metaphor of the Pythagoreans.

I immediately called Jenny in Dornach, and he agreed to meet me. I took the train to Basel, and was met at the station by Jenny's son-in-law, Christian Stutten, who drove me to Dornach. Along the way I learned that Dornach was the world headquarters of the Anthroposophy movement founded by Rudolf Steiner, the esoteric Christian follower of Madame Blavatsky's Secret Doctrine, around 1900. Jenny was a follower of Steiner, and lived in Dornach along with many other Anthropops. Jenny greeted me in his home, showed me part of his lab, and an animated film of some experiments in progress. I collected his papers and books and went home to Paris and Amsterdam inspired.

As the winter progressed, I thought much about morphogenesis and the mathematics of coupled systems of vibrating membranes and fluids, while continuing to teach catastrophe theory in

Amsterdam, and giving many lectures on these subjects at universities all over Europe. Also, my chemically assisted meditations continued, and in them, I pursued the vibration metaphor in conceptual space, and simultaneously, in experiential space.

These experiences were dominated by rapidly vibrating patterns of brightly coloured abstract forms, somewhat like the video art and rock concert light shows of the 1960s. The scintillating light caustics projected by the bright sun on the bottom of a swimming pool also give an intimation of the visual aspect of these meditations. An excellent computer simulation has been achieved by Scott Draves in his art works called Electric Sheep, and may be seen on his website. (www.draves.com)

3b. Summer and Fall 1972, Nainital

Suddenly, the spring semester in Amsterdam was over, grades were recorded, and I had a small savings account. It occurred to me to pay India a brief visit before school began again in the Fall of 1972. Here, I was influenced by the ambience of Amsterdam culture, in which I met so many people who had just returned from, or were about to go again to, India. One young man who had just returned from India told me how he organized his explorations of the Himalayas: just sit in a tea shop until somebody offers you an experience, then accept it, he said. Just go with the flow.

This was my plan. One day at the Kosmos, a psychedelic and meditation hall run by the Dutch government (bless it), I looked up and saw my old friend Baba Ram Dass, the former Richard Alpert. He was among the Harvard trio of professors who had encouraged my decision to experiment with LSD in 1967. Then he had lived briefly in my house in Santa Cruz, California. He had stayed for a time in Nainital, near the western border of Nepal in the Himalayan foothills, where he became attached to a guru called Neem Karoli Baba. I told Baba Ram Dass about my plan to visit India and he gave me instructions for connecting with Neem Karoli Baba.

Find your way to Nainital, he said, then hang out at this particular hotel. He added that if I was supposed to meet Neem Karoli Baba, somebody would approach me and take me to the ashram outside Kainchi, a small village.

And so, late in June, 1972, it came to pass. I went to the ashram with a group of Western devotees in a taxi. But, on arrival I felt a bit disappointed by the amplified music and carnival atmosphere. I saw the devotees sitting in *darshan* formation in front of Neem Karoli Baba on his tucket, all in silence. Something seemed to be going on but I was blind to it. Someone would give him *prasad*, a fruit for example, and he would immediately toss it to someone else. I went back to the hotel in Nainital determined to go on with whomever next approached me.

This process took no time at all. Once back at the hotel, I met a young barefoot Canadian dressed in a simple smock. He introduced himself as Shambhu. As I had been on the road for a long while with a highly evolved travel kit that fit into a small shoulder bag, I was greatly impressed by his kit, which required not even a bag. Shambhu explained that he had been living in a cave in the jungle for several months with two other *sadhus*. There were three small caves by a stream in the jungle, two miles from the nearest town. One of the *sadhus* had just left, and the village had dispatched Shambhu to find a replacement. Apparently, the villagers felt their prosperity was only possible with all three caves occupied by appropriate persons engaged in full-time spiritual practice. Smoking *ganja* apparently is counted as spiritual practice, worship of Shiva it seems. Shambhu was sure that he had been guided to me as I was the chosen person.

Shambu put me on a bus with the usual sort of instruction to ride the bus to the end of the line at Almora, from where I would be guided somehow. This was monsoon season, and there had been heavy rain. After a short while the bus was firmly halted by a major road washout. Everyone climbed out of the bus. Looking down the slope, I was surprised to see Neem Karoli Baba's *ashram* for the second time. What a coincidence! Then, someone

came out to say that I should go at once as Neem Karoli Baba was asking for me. Was this really happening, or was there some mistake? Neem Karoli Baba gave me a bag of breakfast cereal. He said that I would need it in the jungle. Two young Indian devotees were told to guide me on a trek through the jungle around the washout, and put me on a bus for Almora on the other side. By this time I was losing my Western mind, and all this seemed more like paranormal phenomena than conspiracy theory.

It was midnight when finally the second bus arrived in Almora. The village was dark, but the moonlight through a clearing in the clouds showed the shops in silhouette. A man descended from the bus after me. He had a bearer with a long box balanced on his head. I asked him where he was going, hoping for a clue for my next steps. He said that he was a student of Jim Corbett, the famous hunter of man-eating tigers. I had just read Corbett's book, *Maneaters of the Kumoan*. Actually, we were now in the Kumoan Hills. The man said, the long package was his rifle. There was a man-eating panther on the loose nearby, and he was about to spend the night in a tree overlooking a fresh human kill, hoping to shoot the panther. This was his job, he had been sent by the government. I decided not to follow him into the jungle.

I followed some other people who descended from the bus. They seemed to know where they were going, on a footpath into the jungle. One by one they vanished into side paths, and then I was walking alone into the dark unknown, following a single-track footpath. I could not stop to sleep, for fear of the panther. I decided that as long as the path would continue and would look like it was used by humans, I would continue going on till I would reach a village or so. It was my plan. I walked for an hour or so, until there was a fork in the path. In the dark I could see no indication which way to go. Just then, I was startled by a rustle very close by. I could see only grey on grey in the darkness. Then a voice said in clear English, "Good evening, *saheb*, I am from the Wisdom Garden School. I have been waiting for you. You are to go this way." Then, he pointed to the left fork, and vanished. So, on I

went, until I heard voices. Following the sound, I came upon a group of Western hippies in a house, who offered me a place to sleep. Apparently, this was the Kasa Devi Ridge, where the German Lama Govinda had established himself some years ago, after going totally native in the Himalayas. In the morning they showed me the way to a village nearby, which was Dinapani, my destination. The headman interviewed me in his *chai* shop, approved me for cave service, and asked his young son to guide me into the jungle to the cave.

Indeed, there were three caves and two jungle *babas*, who were *mauni*, that is, they did not speak. Not out loud at least. But, voices in my head made me welcome, and spelled out the rules. I must keep a fire going in my cave every night, or a panther would come to claim the space. I must go to the stream every morning to wash, and worship Shiva in an underwater grotto that has been used for centuries and has a polished lingam. The *dhuni* (small ritual fire) must be kept going. Food would be brought by villagers every morning on their way into the forest to tap turpentine trees.

All went well for a week or so. I thought of writing my mother to say I had found a place where I should stay for a few months to further my education, but I could not manage to write. Every night I practised my *yoga-nidra*, and explored further the vibrational realms. There seemed to be instruction regarding the use of 'tools of light' for self-defense and self-maintenance. I practised, according to these instructions, during the day, meditation on Shiva, sitting by the *dhuni* after my bath and the daily meal of *dal-bhat* (rice and lentils), *gur* (raw sugar), and the mandatory *chillum* (straight pipe) of hashish.

Then, the trouble began. I had some unwelcome orders during the night. I was ordered to leave this place immediately. I resisted. Then, the orders were repeated with physical discomforts, which would go away as soon as I agreed to leave in the morning. But, in the morning, I changed my mind. And it kept on happening, in a cycle.

Until one day, around my 36th birthday, July 4, while the other two yogis were away on mysterious missions and I was hard at work meditating by the *dhuni*, I saw a person approaching, far down the jungle path. This figure got larger and larger, and eventually, resolved into a vision from hell, a wild man with a spear, clothed primarily in ashes. He sat down by the fire and accepted a toke from my fully loaded *chillum*. My paranoia subsided, as apparently he meant no harm.

After an hour or so staring into the distance, he turned to me and spoke in unaccented American, "Don't you understand, you are supposed to leave from here. I am going to get up and leave now, and you are to follow me." Which he did. And I did, after collecting my small bag from the cave. After a walk of a mile or so down a path I had not seen before, he said, "I am going this way, you go that way.", and disappeared around a bend. I followed the indicated jungle path, I am not sure how far, and it led directly to Neem Karoli Baba's ashram. Again, the old fellow was apparently expecting me, bellowing, "Where is that professor from California? Bring him here." And so, reluctantly, began my relationship with Neem Karoli Baba.

I was set-up with a house, a library of Sanskrit classics in English translation, and a few devotees for company — including one with Sanskrit skills, Kedarnath, his partner, Uma, and their baby, Ganesh, born during one of our meditations. I was informed by Neem Karoli Baba that I had a mission to relate my meditation experiences to the Sanskrit classics, and transmit the understanding somehow to my colleagues in the USA. These sources included the Vedas, a few Upanishads, works by Sri Aurobindo, and the *Yoga Vashishtha*, a primary text for the Trika philosophy of Kashmiri Shaivism.

I became known as Veda Vyaasa. I remained in this set-up for six months, most of the time with Ray Gwyn Smith, now my wife, who had arrived from California in the meanwhile. The night meditations amplified by microdoses of LSD continued, as I had brought a supply with me from Holland right from the start. *Yoga*

Vasishtha was a great inspiration and support for my ideas of vibrations and maps of consciousness. For example:

Vashistha replied: There does exist, O Rama, the power or energy of the infinite consciousness, which is in motion all the time; that alone is the reality of all inevitable futuristic events for it penetrates all the epochs in time. It is by that power that the nature of every object in the universe is ordained. That power (*cit sakti*) is also known as *mahasatta* (the great existence), *mahaciti* (the great intelligence), *mahasakti* (the great power), *mahadristi* (the great vision), *mahakriya* (the great doer or doing), *mahadbhava* (the great becoming), *mahaspanda* (the great vibration). It is this power that endows everything with its characteristic quality. (Venkateshananda, 1993; p. 89)

Neem Karoli Baba and the entire *satsang* departed for warmer climes to the south, after the thermometer in Nainital dropped below the freezing point in October. Ray and I departed in December for a Himalayan trek in Nepal, where I donated my library to a local university. We walked about 400 miles and returned to California early in 1973. And, thus ended my miracle year, 1972, and also the five year period of one-point focus on spiritual exploration. After returning to Santa Cruz and my job as mathematics professor at UCSC, I reinterpreted the mission given me by Neem Karoli Baba as a program of academic research on vibrations and forms in mathematical models, and in physical fluids as well.

What I learned about cosmos and consciousness during this final year of the five-year project cannot be said in words, perhaps mathematics will be helpful. I imagined this as my task intended by Neem Karoli Baba. But, I had to go on alone, as both Neem Karoli Baba and Hans Jenny died at this time.

4. The Vibration Metaphor for Levels of Consciousness

All my experiences in inner research conformed to the conceptual framework of levels. These levels of consciousness are alternate realities, that may be experienced only one at a time. In the meditation experience, they are transited, in a sequence,

from ordinary reality to more abstract levels. This framework is well known from the Greek, Jewish, and Indian traditions, as we describe below.

4a. My Experience

The same levels of consciousness always appeared in the same order of increasing abstraction, and were recognizable as forms of reality. They seemed as real as ordinary reality. With successive visits, they always had the same recognizable characteristics: visual aspects, colours, speeds of vibration, typical forms. I thought of these levels, each having its own spatial and temporal dimensions, as being stacked up in another dimension, like horizontal planes stacked vertically, with the more abstract levels 'higher'. In fact, we spoke of these meditations as 'getting high'. We spoke of the ascent to higher consciousness. At the end of a meditation, we would descend through these levels in the order reverse to the ascent. This was commonly called 'coming down'. The whole meditation was called a 'trip', like a stairway to heaven and back.

The lowest level, ordinary reality, as we all experience it in everyday perception, is matter-like. It is the world of matter and energy, spatially localized, ego centered, and so on. Things are objects. Philosophers may speak of vibrations or vital forces, but we do not normally observe them.

On the next level, ordinary objects appear the ordinary way, but are seen to have 'vibratory fields' or 'auras' around them. They are surrounded for a short distance by these shimmering auras. In this level of reality or consciousness, we may interact with objects in the ordinary way, for example, by touching, and observe the ordinary response, and also a reaction of the objects' auras.

What do I mean by 'vibratory fields'? This can be best answered by computer graphic animations that simulate my visions quite well, and that *is* one reason for my research with analog and digital simulations of artificial consciousness over these past thirty years, which I am going to discuss below. Meanwhile, you might just think of the patterns of light caustics on the bottom of a

swimming pool, from the bright sun overhead, as you paddle about on the surface of the water, looking down. That kind of moving image, in brilliant colours, changing with great rapidity — all the time appearing meaningful in a mysterious way, as the abstract visual music seems familiar as *deja vu* — is exemplary of my idea of a vibration: visual music in air, light through water, waves on the ocean, and so on. The 'field' is the unknown medium that supports the vibration in consciousness, as water supports the waves on the ocean. (Hesse, 1961)

In the next level up, the object aspect is greatly reduced, and auras predominate. And, higher yet, objects vanish, and the auras join together into a single cosmic vibrating field. Parts of the field seem to behave like objects or beings or disembodied entities. It is possible to navigate and move about the field in some sense, or rather, to move the focus of attention by an exertion of will. Attention replaces the self, in that the self seems everywhere, but attention can be stopped-down, focused, panned, and zoomed-in, as it were. One is everywhere but there is still a personal centre of awareness. Yet above, there is nothing but the field, and that is as far as I have gone. But, I do not think that the 'pure consciousness' experience of no thought is the end of the line.

This is the essence of my recollection of these indelible experiences of long ago, up to 1972. I have maintained them to some extent by less extreme forms of mediation over the years, but much detail has been lost. If my description sounds like every other description of mystical experience, that is most likely due to a universality of the experience. I always had the conviction that the experience is universal, but the transcriptions into words vary.

After my return to academia in 1974, a decade was to pass in mathematical research and teaching, before I could resume my study of the philosophical and cosmological traditions that might shed light on my experiences from 1967 to 1972. My first focus was the Ancient Greek and Western Esoteric Traditions. Later, I turned to early Jewish mysticism, and more recently, I resumed my search of the Indian literature.

4b. The Greek Tradition

The maps of consciousness from ancient Greece have various levels, beginning with the ideas and forms of Pythagoras (570-500 BC), and formalized as a stack of levels by Plato (429-347 BC). Around 360 BC, we find four levels described in Plato's Republic. From the top down, these are: Forms, Intellect, Nature, and Shadows. (Shear, 1990; p. 12) Later authors usually refer to the four Platonic levels, described in the later dialogues, as the Good, the Intellect (nous), the Soul (psyche), and Nature (phusis). The lore of the soul was extended in the Chaldean Oracles of Julianus (ca 200 AD). (Julianus, 1989) (Lewy, 1956) The Greek map further evolved then in the Neoplatonic sources from Plotinus (205-270 AD) to Ficino (1433- 1499). (Abraham, MS#116)

With Plotinus, Porphyry (232-304), and Iamblichus (250-326), we have the addition to Plato's scheme of the Spirit (pneuma). Also known as the Vehicle of the Soul (okema), this was a part of the Neoplatonic theory of incarnation of the individual soul, in which a soul descended through layers of increasing density, being wrapped in Spirit (emanated from stars and planets) en route to incarnation and birth. (Walker, 2000; p. 38) The Spirit mediated between the incorporeal soul and the corporeal body, and supported the functions of sense perception and imagination. (Finamore, 1985; p. 1-2) Later, especially in the theology of Proclus (409-487) and Ficino, the Spirit provided the basis of astrological influence: the ongoing astrological contact between the soul and the planets. (Moore, 1982; p. 53) This theory of astrological influence survived in the works of Kepler (1571-1630). (Rabin, 1987; ch. 3) (Kepler, 1997; bk. 4)

Relating all this to my direct experience, I identified my matrix (intermediating vibrationally between all adjacent levels, described below) with the Neoplatonic Spirit. But, as far as the vibration metaphor is concerned, we have from the Greek tradition, as far as I know, only the harmony of the spheres concept from Pythagoras, Ptolemy, and Kepler. These sources offer abstract

concepts, but there is no record of experiences obtained by meditation. Also, the harmony envisioned in the Greek tradition is only that of harmonious sounding dyads (pairs of musical tones), and not the vibration/form duality of my experience. For this, we know of no antecedent before Ernst Chladni (1756-1827), who founded acoustic physics around 1800, and inspired Hans Jenny.

This is a subtle yet important distinction: the vibration of Pythagoras, Ptolemy, and Kepler is one-dimensional, the musical vibration of a plucked string. Harmony for them is the musical consonance of two plucked strings, the tones related by the ratio of the lengths of the two strings. But, the vibration of Chladni, Jenny and mine is two-dimensional, the musical vibration of a stuck flexible membrane or plate. Harmony for us is a matter of the forms created by a vibration of dimensions, two or more—as the forms seen in meditation, in the higher levels of consciousness, for example.

4c. The Jewish Tradition

Early Jewish esotericism and mysticism derived from Philo Judeus, Greek Gnosticism, and Eastern sources in the early Christian era, especially in Alexandria. (Scholem, 1978: pp. 8-21) The Merkabah tradition, it seems to me, is a coded story of early explorers of my own path.

These pioneers would go down to the basement to spend the night in meditations guided by concentration on visual images, and amplified by breathing exercises. The path desired was an ascent through seven levels of increasing abstraction, each identified by visual features of abstract animations. (Blumenthal, 1978; ch. 5)

4d. The Indian Tradition

The Indian tradition provides a number of different schemes for levels of consciousness, including the five *koshas*, seven *chakras*, 36 *tattvas*, and so on. The closest scheme to that of my own experience is that of the five *koshas*. These are, from the top down: the bliss body (*anandamaya kosha*), astral body (*vijnanamaya kosha*), mental body (*manomaya kosha*), pranic

body (*pranamaya kosha*), and the food body (*annamaya kosha*). These subtle bodies, or levels, may be ascended by prolonged practice of *yoganidra*, or other meditations, ultimately reaching the bliss body. The bliss body is described as an experience of total transcendence, where only the fundamental vibration of the unconscious system remains. (Saraswati, 1998; p. 54)

The vibration metaphor that I encountered in the *Yoga-Vashishtha* explicitly entered the Indian literature in *spanda* (vibration), *urmi* (wave), and *prana* (life-force) concepts of Trika philosophy (Kashmiri Shaivism) due to Vasugupta, his disciple, Kallata, and his student in turn, Abhinava Gupta, tenth century AD. I am a beginning student of this tradition, and I am grateful to Prof. D. Sen Sharma of Kolkata for leading me to this historical information. (Sen Sharma, 2003, 2004; Dyczkowski, 1992; Singh, 1980.)

Pythagoras may have visited India. And, it is known that there were yogis in ancient Greece; they were called gymnosophists. So, vibration metaphors might have diffused either way. The origin of the vehicle of the soul has been traced to Babylonia. (Lewy, 1978; p. 413)

5. Beyond Maps of Consciousness: Communication between Levels

In Section 4a above, I have set out the cosmographic map of consciousness that I had obtained before 1972, with the levels of consciousness stacked up, with ordinary reality and the individual soul or microcosmic levels at the bottom, the cosmic or macrocosmic levels above, and the mesocosmic levels interpolating in between. This personal cartography, although supported by received literature of all traditions, was lacking any model for the interaction or communication between levels. It was in 1972, especially in the cave near Almora, that this part of the picture was filled in. I can express this best in the mathematics of chaos theory, but here I will try in words.

First of all, we see in Hans Jenny's books—and in my continuation of his work in my fluid dynamical vibration laboratory at UCSC in the years 1974 to 1980—how a vibration creates a form. Similarly, a form impressed upon a spontaneously vibrating field modifies that vibration field, and results in a new vibration that encodes the form. Vibrations to forms, forms to vibrations, somewhat like the particle-wave duality of modern atomic physics. Okay, let us use this idea to connect levels of consciousness.

Consider just two of the levels that are adjacent in the traditional cosmographic map described above, and each in a state of vibration, as we experience them separately in our meditations.

In meditation, we experience a sort of quantum leap ascending, and also descending, between levels. We cannot directly perceive any connection or semaphoric transmissions in the space between levels. For this, we are grateful for suggestions from the received literature of the *rishis* of East and West, who show us how to observe these hidden communications. The suggestions I found useful in 1972 were found in the *Yoga-Vashishtha*, and I am grateful to Neem Karoli Baba for that. Subsequently, I discovered the *Spanda* literature of the Trika or Kashmiri Shaivite philosophical tradition, thanks to Professor D. Sen Sharma of the Research Department of the Ramakrishna Mission Institute of Culture, Kolkata.

This is the idea. In the space between levels there is yet another, finer, vibratory field, that I will call the matrix. This resembles the diffusion of neurotransmitters in the extracellular space between neurons in the mammalian brain. The vibration in level A creates a form in level A, this is impressed in the intermediate matrix field, modulating the ongoing vibration there, which carries a vibratory signal to level B, where it impresses a form on level B, and that creates a vibration in level B. This semiotic process, mediated by the matrix field, is hard to grasp in words. However, I have created (with the help of Peter Broadwell) a computer graphic simulation, which is easily grasped. But, this was not possible until the 1990s.

(Abraham, MS#86, 86B)

6. Personal Experiences of Vibrations and Forms in Artificial Consciousness, 1974-1996

My experiments of vibrations and forms in actual consciousness of 1972 morphed, after my return to academic life in 1974, into a program of laboratory science modelled on the work of Hans Jenny. I like to think of this as research in artificial consciousness, but of course, it was more practical to call it fluid dynamics.

The apparatus—I called it a macroscope — consisted of a coupled system of vibrations in various levels. At bottom, was an electronic oscillator capable of producing sine waves, square waves, saw tooth waves, and so on, with control knobs for frequency and amplitude. This source was converted into up-down mechanical vibrations by a horizontal high-fidelity loudspeaker, that in turn vibrated a column of air above the speaker cone. And, this moved a transparent membrane, and above that, a thin layer of water, in which was activated a pattern of thin water waves. These waves were imaged on a translucent screen by an optical system containing two telescope mirrors and a point source of light.

These layers could be regarded as a crude model for levels of consciousness, in that the vibrations of one level created forms on another level, and vice versa. Video recordings of the moving patterns of light on the screen were very reminiscent of the visual experiences seen in my meditations. Some of this work was reported during the 1970s. (Abraham, MS#14-20)

After 1975 or so, mathematical models and computer simulations gradually replaced the analog simulations with the macroscope, and computer graphic video recordings have provided some moving patterns that are highly suggestive of the visual component of my meditation experiences. (Abraham, MS#25-86)

In particular, the papers MS#86 and 86B describe a simulation of an experiment by Rupert Sheldrake on telepathy from a person to her dog. In our model, a vibrating two-dimensional field was modulated by the introduction of a geometrical form representing

the person's thought to come home, and this modulation was recorded as a memory engram of the patterns perceived over time on a one-dimensional 'retina' in the dog's mind. This clearly shows the role of memory in consciousness, as described by Henri Bergson and in Kashmiri Shaivism. (Chakrabarti, 2004)

7. Conclusion

A personal odyssey through the spiritual practices of several traditions, begun in 1967 and still ongoing, has motivated a research program in chaos theory and computational mathematics.

The products of this mathematical program, unlike the subjective experiences of meditation, are open to the scientific paradigm of publication, replication, and the hermeneutical circle of theoretical and experimental synergy. This program belongs to the category of mathematics of consciousness begun by Pythagoras, Plato, and the Sanskrit classics, rather than that of science and consciousness, but may have some implications for science in the long run.

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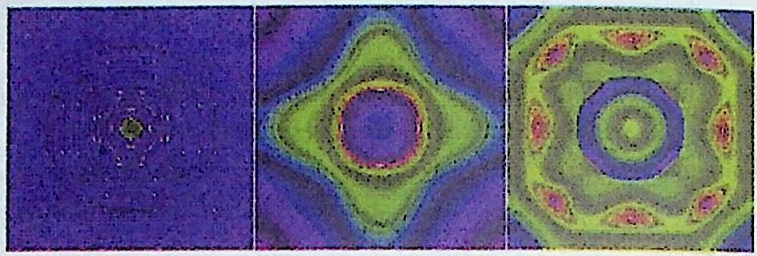

Figure 1. Successive stages of morphogenesis in a lattice of oscillators: the Brusselator simulation of a chemical vibration. From joint work with John B. Corliss, Central European University, Budapest, Hungary.

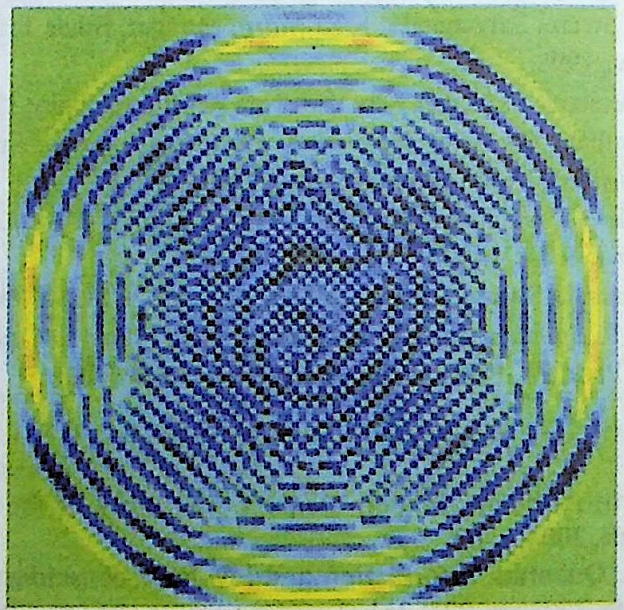

Figure 2. Vibration in an experiment of artificial consciousness: stimulation of the Sheldrake experiment. From joint work with Peter Broadwell, Palo Atlo, California, USA.

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Consciousness in the Indian Medical Tradition

M. S. Valiathan

1. Introduction

At all times, the assessment of the disturbed levels of consciousness of patients was of utmost importance in the Indian medical tradition. Not surprisingly ancient texts, such as, *Caraka Samhita* discussed at length *pralapana* (delirium), narcosis (*mada*), fainting (*mūrccha*) and coma (*samnyāsa*) in terms of causation, clinical features and management.[1] While this was part of a physician's professional responsibility, ancient physicians, Caraka in particular, looked beyond clinical boundaries to understand the nature of consciousness.[2] His system of medicine was, in fact, deeply rooted in the philosophic soil. He is believed to have lived in the first century AD when the six systems of Indian philosophy were in varying stages of development and often found themselves in conflict with Buddhist ideas. Ayurveda crystallized from its indeterminate past during this period when Caraka redacted *Agnivesa-tantra* and produced the classic *Samhita* which bears his name. It is often said that he borrowed ideas from Nyāya, Vaiśeṣika and Sāmkhya which dominated scholarly minds in ancient India. Whether he borrowed from the evolving systems or whether all of them borrowed in varying degrees from a common pool of philosophic heritage is an unsettled question.

2. Consciousness: Stages of Development

Sentient substances differ from the insentient by the possession of sense-organs and their capacity to become aware of sensations.[3] In the Indian medical tradition, awareness was synonymous with consciousness and the terms were interchangeable.

But, the process of becoming aware is complex and involves several steps. For a start, awareness is more than sensations. When one enters a room he may be aware of the ticking of a clock but no sooner does his mind concentrate on reading than he ceases to be aware of the ticking even though the sound continues to reach his auditory organ. Obviously, the attendance of the mind during the sense organ-sense object contact is indispensable for awareness to occur. Mind, apart from ministering to the sense-organs, also provides a stage for the interplay of *sattva*, *rajas* and *tamas*, which could influence the processing of sense data by the mind. A touch by a stranger and one's beloved is physically identical but the sense data acquire different hues in their processing by the mind. The next sequential step in the occurrence of awareness is the processing of the data generated by the sense organ-sense object-mind complex by *buddhi*. *Buddhi* elaborates the data by addressing queries, such as, where in the body did the touch occur or where the pain arose from. Even at this stage, awareness can occur only if the self-specific to each individual is present as a non-participant witness to the operations of the sense organ-sense object-mind-*buddhi* chain.

Caraka uses the terms *puruṣa*, *cetanā* and *ātmā* interchangeably. A further source of confusion is the use of the term *puruṣa* to denote an individual who is defined as a union of five elements and consciousness. But, *puruṣa* or individual self was distinguished from the Supreme Self which is eternal and without beginning.[4]

3. Agents in the Making of Consciousness

The different agents in the making of consciousness are individually discussed below:

3.1 Individual *(Puruṣa):* An individual is a union of five elements and consciousness. It would be equally true to regard him as a union of twenty -four constituents, of which eight are the primary evolutes of nature (*Prakṛti*) and sixteen are secondarily evolved *vikāras*. The eight constituents in the primary category are the unmanifest (*avyakta)* or primordial stuff preceding

existence, intellect (*mahat* or *buddhi*), individuation (*ahaṁkāra*) and five *tanmātras* or the subtle forerunners of the five *bhūtas* or elements. The sixteen secondary constituents are ten sense organs, five sense-objects and the mind which is classified as a superior sense-organ. One might regard it as the conductor of the sense organs' orchestra.

3.2 Sense-organs and sense-objects: Sense-organs, like the rest of the body, are composed of the five *bhūtas* or elements. The sense-organs are themselves not visible but their existence can be inferred from their presence in the eye, ear, nose, tongue and skin. Each sense-organ is accessible to a specific object and no other. The eye cannot see sound any more than the ear can see a tree. These specific objects of the five sense-organs are vision, sound, smell, taste and touch. We apprehend the physical world only through the sense-organs.[5] In addition to these sense-organs, there are five motor-organs like hands and feet which enable one to perform activities.

3.3 Mind: A master sense-organ, mind is imbued with *sattva*, *rajas* and *tamas*. Like other sense-organs, mind has an object which is anything that attracts thinking, contemplation, analysis, decision-making and reasoning. The contact of sense-organ with sense-object does not produce raw data unless the mind participates in the process. But mind is devoid of consciousness. What injects consciousness into the mind is the individual self or *puruṣa*.[6] Medical authorities in ancient India sharply distinguished the mind from consciousness.

3.4 Intellect *(Buddhi)*: The product of sense data presented by the sense organ-sense object-mind complex is worked on by the intellect, giving shape to its pre-final stage of awareness, which is specific for each sense.[7] Given the sheer bulk of sense data and their multi-stage processing, the specific products resulting from the intellectual operation are countless. Caraka likened the role of intellect in producing so many products to the finger originating innumerable notes by plucking the *veenā* string.[8]

3.5 Individual self *(ātmā)*: The operations of the sense organ-sense object-mind-*buddhi* complex take place quickly but do

not result in awareness unless the individual self is present as a non-participant witness. If any component of the complex is absent or defective, self cannot produce awareness as it is a non-participant in the awareness process. Similarly, the self cannot bring about actions except through the agency of the five motor-organs. But, self is invisible and non-localisable. While the body does not know the self, the self knows the body and bears witness to all its functions — sensory and motor.

4. *Prakṛti* and *Puruṣa* in the Awareness of the Process

According to Caraka, there are twenty-four categories — ten senses (five sensory and five motor), mind, five objects of senses and eight-fold *prakṛti* representing stages of evolution. These are *avyakta* (unmanifest, subtle matter), *mahat* (or *buddhi* or intellect), *ahaṁkāra* (individuation) and the forerunners of five elements. Caraka does not, however, use the term *tanmātras*. Nor is *puruṣa* or self included in the list of twenty four categories by Caraka. It would seem that *puruṣa* or self was embedded in the *avyakta* category of *prakṛti*. Whether self is consciousness (sentience) or whether it can produce consciousness only through its connection with the sense-organs, mind and *buddhi* is not clear. As the *avyakta* evolved, the evolutionary products of *prakṛti* became *kṣetra* and that of *puruṣa* became *kṣetrajña* or individual self.

This view of Caraka, according to Professor Dasgupta, formed the basis of the original *Sāmkhya* which is attributed to Pancasikha and discussed in the *Mahabharata*. In the classical *Sāmkhya* of Isvarakrsna, *puruṣa* or self became the twenty-fifth category set apart from *prakṛti*. The resonance of the original Sāmkhya of Caraka can be heard today in the biological view of consciousness, whereas self as a separate category of the classical *Sāmkhya* represents the metaphysical view. The last word in this debate has, by no means, been said.

5. States of Consciousness

Apart from the abnormal states of consciousness in patients which a physician was called upon to manage, medical authorities

recognised primarily three normal states of consciousness in individuals. These were waking, dreaming and sleeping. The process of becoming aware of things and events obviously belongs to the state of wakefulness. Dreams, on the other hand, represent a different level of consciousness induced by bodily phenomena. Traditional medicine in India claimed that the body is permeated by countless channels (*śrotas*) including channels for each *dhātu*, such as, muscle, blood, bone and so on. The mind too had channels which were ubiquitous in the body. When perturbed *doṣas* accumulate and clog the channels of the mind, free flow would be compromised and the mind, perturbed. The master of sense-organs that the mind is, its perturbation would agitate the senses in the semiconscious state of sleep and manifest as dreams.[9] When the weary mind and equally tired senses withdraw from their objects, sleep would occur in a healthy indivudal.[10] While sleep was recognised as an essential component of health, compulsive drowsiness and sleep occurring in disease conditions was distinguished as abnormal.

Ancient medical authorities largely confined themselves to wakefulness, dreams and sleep which concerned them in the care of patients. There is, however, a solitary reference in the *Caraka Samhita* to the practice of *yoga* which seeks to focus the sense-organs in the mind, the mind in the individual self and the individual self in the Supreme Self. This results in a super-conscious state when a 'person sees all living things as identical with *Brahman*'.[11] This passage on a fourth state of consciousness does sit uncomfortably with Caraka's general philosophy, code for living and his clear identification of the three goals of life as 'longevity, adequate means for living and a blessed after-life'. Whether the passage was a later interpolation or whether Caraka came to accept *mukti* or emancipation which had probably become deeply rooted in the Indian mind as the goal of life is unclear from the text.

6. Localization of Consciousness

Though Caraka and Susruta were well aware of the existence of brain within the skull, they did not associate brain with

consciousness or emotions. Nor did they discuss a brain-mind relationship. There are no references to the brain in the consideration of disorders, such as, epilepsy and insanity. On the other hand, Caraka and Susruta stated explicitly that the seat of consciousness and emotions was the heart. It was believed that channels (*srotas*) of the mind existed all over the body including viscera and the free flow through the channels was necessary for healthy living. As the channels were ultimately connected to the heart, the flow of sense data would apparently reach the heart and result in awareness. The function of the brain was nowhere discussed. The sole authority who located consciousness in the brain was Bhela who was a disciple of Atreya and a classmate of Agnivesa whose *Tantra* was redacted by Caraka after several centuries. Incomplete, Bhela's *Samhita* never received the kind of prestige or authority enjoyed by those of Caraka and Susruta. His views, such as that, on the localisation of consciousness may have been regarded as too unconventional to form a part of the orthodox doctrine in medicine.

What is equally surprising is the absence of any reference in the Caraka and Susruta *Samhitas* to the extensive literature of *Tantra* on the progressive rise in the level of consciousness as *kundalini* moved up along the *cakras* of *suṣumnā*. The *Tantra* literature clearly localised different levels of consciousness including the 'super conscious state' in the spinal cord and brain. It is hard to imagine that this ancient doctrine did not exist when Caraka redacted the *Agnivesa tantra* in the 1st century AD. It appears that the doctrine was either secret and known only to the practitioners of *Tantra*; or the medical authorities dismissed the view advanced by a mystical school which had little knowledge of the practice of medicine.

7. Consciousness in the Medical Tradition

It is true that medical tradition laid greater emphasis on monitoring consciousness and its return from abnormal to normal than on its philosophic basis. The term *cetanā* which was used by Caraka to indicate consciousness and to classify substances as

sentient and non-sentient covers more than consciousness as understood in contemporary discussions. For example, medicinal plants were believed to be *cetanāvān* and even sacred. If a plant had to be harvested for preparing a major formulation, the physician or his attendant was obliged to offer an invocation to the 'spirit' of the plant prior to cutting it down. *Cetanā*, therefore, could not be limited to the human brain and its operations as the modern understanding of consciousness implies. For the ancient physicians of India, *cetanā* was everywhere, expressing itself in varying degrees in plants, animals and human beings. This concept has echoes in our own times in the observations of J. C. Bose whose path-breaking discoveries are seldom mentioned in seminars on consciousness. He used electrical instruments a hundred years ago to study the response to stimuli as they are used extensively in the study of the brain even today. He noted that metals, plants and animals are excitable and show additive effect, staircase effect and fatigue in response to electrical stimuli; cold and heat inhibit or accentuate the response in metals, plants and animals, and fatigue occurs on continued stimulation in all three categories. He claimed that he could find no breach in continuity in the entire range of responses among metals, plants and animals.[12] These observations are in harmony with the *Ayurvedic* concept of *cetanā* even though they are not identical and are not amenable to one-to-one correlation.

The scientific study of a so complex and elusive subject as consciousness is possible only by adopting the methodologies of diverse disciplines, such as, anatomy, physiology, chemistry, biophysics, psychology and so on. Every time when new findings or insights are uncovered, it is natural that the scientific community should greet them with excitement. Cortical localisation by the application of electrodes, EEG, neuro-chemistry and molecular biology have opened new vistas over the years and raised hopes of gaining a full understanding of the nature of consciousness. This remains a pious hope even as progress is being made incrementally. While scientific endeavour would always extend the frontiers of

understanding, one should desist from repeating the mistake of the blind men who insisted that a part of the elephant was the whole. Like 'man the unknown', a part of consciousness may always remain unknown even when a great deal has been learnt segmentally through prodigious endeavour.

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Consciousness as Revealed to the Seekers of Spiritual Truth

DEBABRATA SEN SHARMA

I. Meaning of the Word 'Consciousness'

The Sanskrit term *caitanya* is generally rendered into English as consciousness but to what extent the English translation of the term is equivalent of *caitanya*, will be clear when we know its nature. Derived from the verbal root '*cit*', meaning 'light' or 'knowledge', the Sanskrit term *Caitanya* signifies awareness in the general sense, or sentience, a characteristic seen innate in all living beings, distinguishing them from all non-living objects. It is such an obvious distinguishing feature, a fact of our day to day experience that Indian philosophers did not feel the necessity of defining it in the formal manner. It is present in the physical bodies of all living beings from their birth to their death, making them alive and responsive to external stimuli. Some schools of Indian philosophical thought go to the extent of regarding *Caitanya* to be the all-pervasive Reality, present in everything — sentient beings and insentient objects, constituting their core, making the very attempt to define an impossible task.

But, this has not dampened the spirit of enquiry on the part of seekers of spiritual truth. They have made relentless efforts to unravel the mystery of its nature and have also succeeded to a great extent in their pursuit.

When we study our ancient literature, shedding light on the development of spiritual thought in the hoary past, we come to know that the nature of *Caitanya* has been explored in two distinct ways in the past — one by the spiritual practitioners or *sadhakas* who, following the arduous path of spiritual discipline *(sadhana)*, succeeded in obtaining direct vision of the *Caitanya,* their true

Self, thereby obtained its first-hand knowledge. Two, by the metaphysician-philosophers who made attempt to understand intellectually the content of the experience of *Caitanya* by the spiritual practitioners, adopting rational method of logical analysis and synthetic judgment in accordance with their particular metaphysical view point. They (metaphysician-philosophers) have done this exercise to enable other ordinary persons to know its nature as they themselves lack the capacity for comprehending intellectually the nature of *Caitanya*.

II. Means for obtaining the Knowledge of *Caitanya*

(i) *Sruti* (Revealed Scriptures)

These two sources for knowing the real nature of *Caitanya*, technically called *Sruti*, i.e., the revealed *Vedic* scriptures embodying the direct experiences of the *Vedic* seers (*risis*) and *Upanisadic* sages (*munis*), and *Smriti* represented by different schools of Indian philosophical thought attempting to explain the intuitive experiences of *Caitanya* in intellectual terms, felt these are not mutually independent but complimentary to one another. As a matter of fact, *Sruti* embodying the intuitive experiences of seers and sages is regarded by all orthodox schools of Indian philosophy as most authoritative and infallible, nearer to the truth compared to the latter, i.e., *Smriti* represented by philosophical treatises which are regarded as subservient or inferior to *Sruti*, so far the content is concerned. In the event of any contradiction appearing in their deliberations on the nature of *Caitanya, Smriti* categorically declares that its views are subject to ratification by *Sruti.*

(ii) *Smriti* (Schools of Indian Philosophical Thought) — Its Limitation

Moreover, the various schools of Indian philosophical thought constituting the class *Smriti* propagate divergent theories about the nature of *Caitanya* conceptualized by them. These theories, divergent in nature appear bewildering to genuine spiritual seekers

as they create confusion in their minds due to one theory cancelling the other. The various theories, therefore, appear to them *prima facie* mere suppositions or thought projections in conformity with their particular metaphysical view point. The *Advaita* Saivites of Kashmir rightly call them as thought-constructs (*vikalpa*) formulated by the confused intellect. They point out that *Caitanya* as such is beyond the comprehension of the finite intellect. They, therefore, regard the knowledge of *Caitanya* as *nirvikalpa* (free from thought construct) in nature, therefore, incapable of being conceptualized, i.e., free from thought construct or conceptualization. Under these circumstances, one might ask how can then *Caitanya* be known.

The answer is provided in the *Kenopanisad,* wherein the sage declares that the sense-faculties like eyes, speech, intellect, etc., cannot reach *Caitanya* because these have the tendency to move out, and not enter inward in the percipient, where *Caitanya* is lodged; words cannot describe *Caitanya* as it is infinite in nature: the intellect cannot seize it on account of the same reason. *Caitanya's* nature is not grasped even when it is spoken of by the one who has directly seen it on account of the listener's intellect covered with the *veil* of ignorance.[1]

The *Kathopanisad* also speaks about the limitation of our sense faculties in grasping the nature of *Caitanya* constituting the core of our very existence. Says the sage — It (i.e., *Caitanya* as Self) cannot be reached by words (i.e., by descriptions in words), intellect or the external sense (like eyes). Its nature is pure being only (*astiti*), how can that (being nature) be, grasped by one (who himself is of the nature of being).[2] The object of knowledge and the subject or the knower must be mutually different, then only knowledge is possible.

The *Upanisads* always emphasize the point that *Caitanya* is always the subject, the knower, it can never be an object of knowledge.[3] What here the *Upanisadic* sage wants to convey is the paradox involved in treating *Caitanya* like any other object of knowledge in the world that is known by normal means for obtaining

knowledge. If this is so, then doubt that naturally arises in the discerning minds is that the nature of consciousness will remain unknown. The answer given by the sage in the *Upanisad* is, 'No'. The *Kathopanisad* says that the nature of Self (*Caitanya*) cannot be known merely by listening to discourses (by the wise), nor by the reflection by using one's sharp intellect, nor by deeper study of the scriptures. The nature of the Self (*Caitanya*), however, can be grasped only by one whom it itself chooses to let know. It lays bare its nature before him.[4]

III. Suggested Path of Spiritual Discipline

What the sage wants to convey here is the fact that the nature of Self (*Caitanya*) can be known by the seeker who has developed within him the capacity, through the practice of spiritual discipline, to comprehend its nature. One might ask what kind of spiritual discipline the seeker of Truth must follow to develop necessary qualification in him to obtain direct experience of the Self or *Caitanya*. The *Kathopanisad* gives an idea of the mode of spiritual discipline in the following words – "The self-manifested Lord, i.e., Creator of the world has equipped the physical bodies of the embodied beings with doors (outlets) in the form of sense organs opening outwards (of the body) to facilitate their movement towards the external world (of objects), therefore they experience only the external objects, and not the inner Self (i.e., *Caitanya*). Only some seekers developing the power of discrimination and also of aspiration to obtain 'immortality' are really seen to experience the indwelling Self (*Caitanya*) keeping their eyes (i.e., sense-faculties) shut.[5] The sage here gives the advice to the seekers of truth to try to stop the outward movement of their sense-faculties for grasping external objects, thereafter trying to focus their 'gaze' on the real Self (*Caitanya*) that exists deep inside them. Then only, they can succeed in their endeavour to unravel the mystery of *Caitanya*. The performance of austerities (*tapas*) and practice of meditation (*dhyana*), etc., are necessary for purification of their *adhara* (physical body serving as the instrument) and development of the capacity for focusing their gaze on the real self.

The *Upanisadic* sage gives clarion call to seekers of spiritual Truth to 'wake up from slumber, arise and embark on the spiritual pilgrimage to reach the ultimate Goal' – the realization of their true consciousness nature. He also assures them of success, citing his own example. Addressing them as the sons of immortality, the seer says, "O sons of immortality! I have seen with my inner eye of wisdom the divine levels of existence on which rests the Great Being, i.e., *Caitanya*. I have known Him by direct experience. There is no other way to reach Him except through following the path of spiritual discipline."[6]

The *Upanisadic* seer tells us that the 'face' of Truth, i.e., Consciousness-self normally lies deep inside men in the core of their being and is covered up with a veil of ignorance. It has to be removed by the spiritual seekers practising spiritual *sadhana,* so that the self-effulgent consciousness could be revealed. But, this task is not an easy one, it requires relentless personal efforts by the *sadhakas* and also the divine grace to accomplish this task. They utter the prayer addressed to the Sun who symbolizes the god of illumination which is as follows – "The face of Truth (representing in this context, the consciousness-self) lies concealed (within all embodied beings) by a 'golden vessel'. O Sun-god (*pusan*)! do remove the vessel (representing the veil of ignorance) so that the face of Truth or Consciousness-self could be 'seen' directly within, by those who are 'truthful' (i.e., pure in nature, and keen to experience Truth face to face."[7]

The *Upanisads* are replete with the accounts of first hand experience of *Caitanya* in the form of Consciousness-self by the seers and sages which they articulated in response to the queries put by their disciples. These accounts of mystic experiences give us fair idea of the nature of Consciousness (*Caitanya*) in 'experiential' form in which the spiritual seekers are deeply interested before embarking on their spiritual journey to reach the goal.

R.D. Ranade, a well known spiritual master and philosopher savant, in his epoch-making book 'Constructive Survey of the

Philosophy of the Upanisads', has classified different kinds of spiritual experience of *Caitanya* by seers and sages under four broad heads: (i) vision of *Caitanya* as Consciousness light. (*jyoti* or *prakasa*); (ii) the experience of *Caitanya* as the unstruck sound (*anahata nada*), (iii) the experience of *Caitanya* as bliss (*ananda*) and (iv) the experience of *Caitanya* as causing the upsurge of feeing of love (*prema*) within.

It is proposed here to cite passages from some *Upanisads* and other texts to illustrate the above mentioned types of mystical experience of *Caitanya* and also obtain corroboration thereof from the mystical experiences of some contemporary spiritual practitioners.

IV. Vision of *Caitanya* as Light (*jyoti*) or Illumination (*prakasa*)

There are numerous passages occurring in the ancient texts depicting *Caitanya* as of the nature of light (*jyoti*). There is also corroborative evidence from the spiritual experiences of *sadhakas* testifying this truth.

It is well known to spiritual practitioners that they are required first to stop the normal outward movement of their sense-faculties in their psycho-physical framework to grasp the external objects in order that they could concentrate their attention inside on their Consciousness-self (*atma-Caitanya*) existing within their physical body. As they achieve some degree of success while practising meditation, they, in the initial stage, experience total darkness prevailing in the mirror of their intellect. The darkness experienced by them symbolises the 'void' (*sunya*) which arises from the cessation of the reflection of images of external objects in the mirror of their intellect, accompanied simultaneously by the dissolution of self-awareness as the percipient subject. This lies at the root of the vision of void (*sunya*) within the subjectless objectless awareness that underlies the vision, making the awareness of awareness possible. In course of their persistent search for the Consciousness-self (*atma-Caitanya*) within, when they make some progress in that direction following the cleansing

of their *adhara* (psycho-physical framework serving as the instrument of their practice of spiritual discipline), they experience the light (*jyoti*) of *Caitanya* within having different degrees of brightness. In the beginning, the Consciousness-light appears as glimmer similar to that of firefly, fleeting around against the backdrop of the void. Later, the Consciousness-light is experienced by the *sadhaka* resembling the glow of light of an earthen oil-lamp, thereafter appears shining like a star in the backdrop of the darkness of the void. This Light (*jyoti*) grows brighter and brighter with the purification of the intellect in the *sadhaka*, till it assumes the form of great illumination (*mahaprakasa*) similar to that of the sun (*surya*). All forms of external objects of knowledge (*rupa*) dissolve in the great illumination, so do all kinds of effulgence emanating from different sources.

Here, it may be pointed out that the nature of Consciousness-illumination or light is totally different from the gross physical light we are all familiar with in our mundane existence. The Consciousness-light neither glare nor quiver, resulting in the experience of intense happiness or producing heat. As it illumines the mirror of intellect or the inner being of a *sadhaka*, he experiences peace, tranquility and also bliss. The Consciousness-illumination cannot be perceived by our physiological organ, the eye, as it shines within the innermost recess of *sadhaka's* being. It not only removes the remnants of the veil of ignorance from the intellect of the *sadhakas* practising meditation, but also sharpens the grasping power of intellect in them. It causes the development of an extra-ordinary faculty of penetrating insight in them which enables them to discover the inner meaning of the teachings of *Shastra* (scriptures). They are able to look beyond and across, transcending the barriers of time and space. The vision of *sadhakas* undergoes radical change, they are able to look at the world-manifestation as one 'integral Existence (*akhanda satta*) which lies both within them and outside them'. Their intuitive faculty (*pratibha*) is also strengthened. It is for this reason that many schools of Indian philosophical thought equate *citprakasa* (Consciousness-light) with the highest Knowledge.

The different passages quoted below from different *Upanisads* delineate the gradual development of the vision in *sadhakas* following the experience of effulgence of Consciousness-light within them, indicating their progress in the path of spiritual journey to the ultimate Goal. The description of the experience of Consciousness-light embodied in the quotation from the *Upanisads* are very often metaphorical and suggestive, because the *Upanisadic* sages find their words inadequate in conveying fully and faithfully, their esoteric experiences of consciousness-light within them.

The *Upanisadic* citations are as follows:

1) In the passage taken from the *Svetasvatara Upanisad*,[8] the sage tells us that the light of *Caitanya* is experienced by the mystic *sadhakas* when they first set their foot on the path of their spiritual journey. They first experience 'mist' and 'smoke' pervading the entire field of their vision. This is suggestive of the presence of the veil of ignorance covering their intellect. Suddenly, the veil of ignorance is pierced and the sun, symbolizing the illumination nature of *Caitanya* in brilliant form, peeps in for a while, it disappears shortly afterwards to reappear in the form of consciousness-fire (*cidagni*), blazing forth suddenly for a short time. The wind starts blowing, minimizing the brilliance of the Consciousness-sun. It is followed by the appearance of light appearing in the form of firefly fleeting around. It sometimes appears before mystic *sadhakas* like sudden flash of lightning, but not accompanied by thunder. It sometimes is seen like a clear crystal glittering with multi-colour. It sometimes appears before *sadhakas* like moon shedding soothing and steady light. The sage is of the view that sadhakas experience the effulgence of Brahman, the all-pervading Consciousness-Reality in different forms as they progress in gradual steps towards the Goal, before they merge in to become one with Brahman, the ultimate Goal of their *sadhana*.

2) The *Brihadaranyaka Upanisad* describes the experiences of the light of *Caitanya* by mystic *sadhakas* progressing in his spiritual journey, almost in similar words. The sage says that the illumination of *Caitanya* appears to the *sadhaka* as taking different

colours resembling the bright saffron coloured raiment, or red coloured beetle fleeting around in the space. The *sadhaka* sometimes experiences his consciousness-light similar to the flame of fire appearing in yellowish colour, or softly radiant like pink coloured lotus. At times, the consciousness-light shines like sudden flash of lightning.[9] The experience of Consciousness-light in all these different forms indicates on the one hand his progress in the spiritual journey, and on the other, enhances his glory as a mystic *sadhaka*.

3) The *Chandogyopanisad* provides us with another instance of experience by a *sadhaka* of the Consciousness-light within, after he succeeds in crossing the barrier of his mundane existence. Since, all such experiences by a *sadhaka* of his Consciousness-light pertain to the innermost core of his being, he does not see the light of Consciousness outside himself in the external world, but deep inside him illuminating the mirror of his intellect serving as the instrument of cognition, which is called the inner eye (*antahkarana*).[10] The sage says that an individual *sadhaka* could be physically blind, but that does not come in the way of his 'seeing' the light of Consciousness illuminating his intellect. As the darkness of the night of the dark fortnight is dispelled by the light of the sun or the moon, similarly the darkness of ignorance disappears when the light of Consciousness is seen or experienced. If it happens, it happens for ever. For example, the well known Hindi poet Suradasa was born blind but his vivid description of the pranks of the child Krishna testifies the fact that once his intellect was illumined by the light of Consciousness, physical disabilities could not come in the way of his obtaining vision of the play of child Krishna.

4) We find three verses in the *Bhagavad Gita* Ch.XI giving vivid description of the brightly luminous Consciousness-light witnessed by Arjuna, the Pandava warrior, after he was endowed with the 'eyes of spiritual wisdom' by Lord Krishna, on the battlefield of Kurukshetra on the eve of the *Mahabharata* war. He did not see the charioteer Krishna as a human being, as his bosom friend, philosopher and guide, after he discovered his real

nature with his penetrating eyes of wisdom; he saw him as a 'massive light of Consciousness' shining like a thousand suns in the firmament. He perceived Krishna as the all-engulfing light in which all forms of mundane objects of knowledge (*rupa)* merged, or became dissolved.

To quote Arjuna's words on his witnessing the massive Consciousness-light in which the duality of the teacher and the disciple, the Universal being and the individual being fused, loosing their individual identity:

"If the illumination of a thousand suns were to shine in the sky that might resemble the splendour of the Great one, i.e., the Consciousness- mass."[11]

"Shinning like a man of splendour everywhere with disc mace, tiara, I behold thee, blazing as fire, as the sun, dazzling the gaze from all sides in the sky immeasurable."[12]

"I see the face blazing as the sacrificial Fire, and its splendour that is burning the world".[13]

5) Professor Jadunath Sinha, in the preface of his well-known book 'History of Indian Philosophy' Vol. I, has vividly described his spiritual experiences of the illumination nature of Consciousness overwhelming his very self-awareness (*atmabodha*).

"On October 10, 1959, I was meditating on my divine Mother (Kali) at my eyebrow centre (*ajnacakra*). One fair beautiful foot of the Divine Mother flashed in the centre. Immediately after, another similar foot flashed at the same site. They (feet) were tinged with red colour at the fringes. Light issued out of them and spread over my entire body. Light streamed out of it, upward and downward, and in all direction. The entire universe became sea of light. Light, light, moving and surging light. There were no centres of light, fire of consciousness, subjectless and objectless consciousness. I forgot myself, I forgot the world. I forgot God, personal God. It was not myself, but one infinite consciousness. It was spiritual illumination. I have had no such mystical experience in all my life so far. How long such experience continued, when it vanished, when I regained my normal consciousness, I do not

know. Breath control continued in my body, subtle processes continued within my body. Body and mind consciousness vanished in the illumination."

Hindu gods and goddesses are often depicted as having halo round their head. Even realized saints and spiritual men are believed to wear halo round their face. The presence of halo around their faces is not figment of our brain but a fact, as its presence has been noticed by many spiritual practitioners. The existence of halo round the faces of gods and goddesses and realized beings can be explained on the basis of illumination nature of the Consciousness-self. Many years ago, some scientists discovered aura emanating from the physical bodies of some *sadhakas* in meditation. They even succeeded in taking photographs of the aura with the help of very powerful camera, but they could not solve the mystery of its source. May be, this phenomenon has some connection with the effulgence of their Consciousness-self becoming manifest around their crown.

There are many instances of *sadhakas* developing the extra-ordinary power of knowing the past, present and future life of others by looking into their minds with the help of their penetrating eyes. This happens only after they obtain the vision of the illumination nature of Consciousness.

V. Experience of *Caitanya* as Sound (*nada*)

A few passages occur in some of the earliest *Upanisads* mentioning that *Caitanya* is sometimes experienced by the mystic *sadhakas* in the form of unstruck sound (*anahata dhvani* or *nada*), arising naturally within with the awakening and upward and downward movements of *pranasakti,* popularly called *kundalini sakti* through *susumna nadi*. In fact, the said term *susumna* literally means sound. The *Brihadaranyaka Upanisad* tells us that the Consciousness-fire (*cidagni*) is always ablaze within the physical bodies of all embodied beings. This *agni* (fire) is technically called the *vaisvanara agni* (the all-pervasive Consciousness-fire). The Consciousness-fire is only a manifestation of the Divine *Sakti*, pulsating ceaselessly within the physical

framework of all embodied beings, remaining always inseparably fused with the Consciousness-illumination (*citprakasa*). The Consciousness-fire produces continuous sound resembling the crackling of firewood. The spiritual practitioner listens to this sound in trance when all his external sense-faculties cease working. In the words of the sage in the *Brihadaranyaka Upanisad:* "This *agni* (Consciousness-fire) is v*aisvanara* present in the physical bodies of all men causing digestion and assimilation of food. Its presence is felt by them from the sound (ghosa) it produces on shutting their external sense of hearing."[14]

The *Chandogyopanisad* also supports the above description, adding that the presence of *Caitanya* in their physical body can be experienced by spiritual practioners in the form of unstruck sound (*nada*) resembling sometimes the roar of an ox, or sometimes as a peal of thunder or cracking of firewood while burning, on shutting their external organ of hearing.[15]

The *Mundakopanisad* speaks, almost in similar terms, about the experience of the C*aitanya* within the physical body by mystic *sadhaka* during trance (*samadhi*). On *photic* or auditive experience by the *sadhaka,* the sage says – "On a supreme disc set with gold exists the spotless and immaculate Brahman. It is the light of all lights, the source of all mystic experiences about it including that of sound."[16]

Some later *Upanisads* like the *Hamsopanisad* and *Tantric* texts quoted in the *Tantraloka* Ah. VI describe in detail the types of primordial sound (*anahata-nada*) heard by the spiritual *sadhakas* during deep meditation culminating in trance (*samadhi*). The primordial sound heard by them sometimes resembles (i) *cin* or murmur sound, (ii) sometimes *cincin* or humming in a louder form (iii) sometimes like shrill sound made by a kind of insect called *ciravaka* (cricket), (iv) sound similar to that produced by blowing a conch shell, (v) sound resembling that produced by playing flute, (vi) sound similar to that produced by playing a string instrument, (vii) sound similar to that emanating on ringing a bell, (viii) sound resembling that of thunder, (ix) sound resembling

the roar of a lion, (x) sound similar to that produced by a percussion instrument when played.[17] The listening of sound in any of the form by the *sadhaka* during deep meditation is only indicative of their proximity to the spiritual goal, i.e., the realization of their true *Caitanya* nature.

Abhinavagupta in his *Tantraloka* provided us with explanation in metaphysical terms for *Caitanya* being experienced by *sadhakas* in the form of primordial sound. In doing so, he has shed light on the relation between *Caitanya* and the sound. He says that according to Kashmir Saivism, *Caitanya* is always self-conscious and self-aware. This self-awareness (*paramarsa*) is expressed in the form of uncreated (avyakrita) sound of *so 'ham* (that I am) or *hamsa mantra.*[18]

Since the *nada* (uncreated primordial sound) is always arising naturally within the physical framework of all embodied beings, neither there is any utterance of this sound nor there is anything to hinder it. The Lord, i.e., Consciousness-self lodged within physical body of all living beings utters this sound (*so 'ham*) non-stop.[19]

VI. Experience of *Caitanya* as Bliss (*ananda*)

It is well known to the students of Indian Philosophy that the ancient *Vedic* texts describe *Caitanya* of the nature of massive bliss (*anandaghana*). Many spiritual practitioners too have 'tasted' the bliss nature of *Caitanya* during meditation. A *mantra* occurring in the *Rigveda* tells us how a spiritual *sadhaka* getting the glimpse of the core of his being, the Consciousness-self (*Caitanya*) witnesses sudden transformation of his vision. The entire worldly surroundings appear to him in a new garb throbbing with bliss-experience. Using symbolic expression *madhu* (sweetness) to denote the bliss-nature of Consciousness pervading the entire creation, the Rigvedic seer and the upanisadic sage describes the experience of realized spiritual seekers this way: "To him the breeze (blowing gently on earth) appears as full of divine honey, i.e., blissful, the flowing waters in streams and rivers also taste sweet (blissful) in nature". He prays to the Almighty –

"Let the herbs also appear to us bestowing bliss, days and nights also appear as full of bliss, the earth also appear as full of bliss, let heaven shower bliss on us through rainfall, let the vegetation by providing nourishment be bestowed with bliss, let the sun, the giver of energy be the source of bliss, the cows also by giving milk provide us with bliss."[20]

The spiritual *sadhaka*, realizing his true nature, experiences an undercurrent of bliss in everything that he perceives in creation, viz., trees, birds, breeze, flowing water in streams, etc.

The sage in the *Taittiriya Upanisad* says that when a spiritual *sadhaka* realizes this true nature as the all-pervading Reality, *Brahman* as the embodiment of massive Bliss, the creation that has emerged from *Brahman* appears to him as full of bliss. In the words of the sage: when a *sadhaka* realizes *Brahman* of having nature of bliss, he discovers that "The entire creation originated from the bliss nature of *Brahman*; having been born this way from bliss, all beings are sustained by bliss, and finally in the end they merge in bliss".[21] The bliss nature of *Brahman* is the ultimate source and sustainer of creation which gets dissolved into it at the time of cosmic dissolution.

We find on reading the famous Bengali poem-cum-song entitled '*anandadhara bahiche bhuvane*', etc., (stream of bliss is flowing in the universe) that its author Rabindranath Tagore probably once had experienced sudden transformation in his vision of the external world which he articulated beautifully in this poem. He tells the readers in this poem that one day the mundane world suddenly appeared to him in a new garb. He 'saw' bliss flowing out from the reservoir of bliss that is located within him, transforming every phase of manifestation into one dripping with bliss. The source of this bliss-experience, however, was the bliss nature of his Consciousness-self. He discovered that he himself was immersed in the ocean of bliss. This experience of massive bliss-nature has been referred to by Siddha Somanada in his *Sivadristi* (vision of Siva), an important text belonging to Trika school of Saivism, as an offshoot of transcendence of Consciousness-self, (*nivritta-*

cit, i.e., Consciousness-light remaining confined within).[22] This experience is sometimes metaphorically described in the *Tantra* texts as similar to that experience of a couple locked up in embrace and not aware of anything existing besides themselves. They are not even aware of their own existence.[23]

VII. Experience of *Caitanya* as arousing within the Feeling of Love

The *Advaita Saiva* texts mention two distinct classes of spiritual practitioners (*sadhaka*) – one, the *mumuksu sadhakas* who are self-centred, interested only in securing their personal liberation; two, the *bubhuksu sadhakas* possessing large heart and the capacity for self-expansion to enjoy fruits of emancipation sharing it with his fellow *sadhakas.* They wish to work for alleviating the suffering of their fellow-beings after realizing their true consciousness nature. It is held that the *bubhuksu sadhakas* are endowed with certain qualities innate in them, such as, *maitri (*benevolence*), karuna* (compassion), *mudita* (joyfulness), etc., therefore, their hearts melt finding fellow beings writhing in pain in the world. The main reason for the rise of the feeling of sympathy within for suffering humanity appears to be the result of their self-extension which is reflected in melting of their hearts at the sight of pain in the world. They discover the presence of the same Consciousness-self in the entire animate creation, a fact that binds them all together by a thread of unity or oneness, as it were. The result of this experience is the rise of the feeling of love (*prema*) within the percipient *sadhakas*. This is a logical corollary of their self-extension. The *Upanisadic* sage declares that 'the son of an individual being is not dear to him because he is biologically a part and parcel of the father, but because he (the individual) finds his own image in his son'. His heart is, therefore, filled with love and affection for the son. Likewise, the finding of the spiritual *sadhaka* of the presence of his 'essence' in all beings naturally results in the upsurge of the feeling of love for all, inanimate animate creation. All this follows from the spiritual practitioners experiencing their consciousness-nature within and also outside them in the world.

To conclude, it may be stated here that the above mentioned four kinds of experience of *Caitanya* do not cover all possible experiences of *Caitanya* by the practitioners of spiritual discipline (*sadhakas*) which are impossible to include in one paper. One might ask about the reason behind the infinite variety in the experience of *Caitanya*. In reply, it may be stated that the difference in the experience of *Caitanya* by *sadhakas* is due to the limitation in their means for apprehending *Caitanya*, e.g., their intellect, on the one hand, and the integral nature (*akhanda-svarupa*) of *Caitanya*, on the other. Finite intellect in a *sadhaka* can grasp only one aspect of the nature of *Caitanya* and know only a facet of the *akhanda Caitanya*.

References:

१. न तत्र चक्षुर्गच्छति न वाग्गच्छति नो मनः ।
न विद्मो न विजानीमो यथैतदनुशिष्यात् .... ॥ *Kenopaniṣad,I,3*

२ . नैव वाचा न मनसा प्राप्तं शक्यो न चक्षुषा ।
अस्तीति ब्रुवतोऽन्यत्र कथं तदुपलभ्यते ॥ *Kaṭhopaniṣad,II,3,12*

३. विज्ञातारमरे केन विजानीयादिति.. .
Bṛhadāraṇyakopaniṣad,IV,5,15

४. नायमात्मा प्रवचनेन लभ्यो न मेधया न बहुना श्रुतेन ।
यमेवैष वृणुते तेन लभ्यस्तस्यैष आत्मा विवृणुते तनुं स्वाम् ॥
Kaṭhopaniṣad,I,2,23

५. पराञ्चि खानि व्यतृणत् स्वयम्भूस्तस्मात्पराङ्पश्यति नान्तरात्मन् ।
कश्चिद्धीरः प्रत्यगात्मानमैक्षदावृत्तचक्षुरमृतत्वमिच्छन् ॥ *Ibid,II,I*

६. श्रृण्वन्तु विश्वे अमृतस्य पुत्राः आ ये धामानि दिव्यानि तस्थुः ।
वेदाहमेतं पुरुषं महान्तमादित्यवर्णं तमसः परस्तात् ।
तमेव विदित्वाऽतिमृत्युमेति नान्यः पन्था विद्यतेऽयनाय ॥

७. हिरण्मयेन पात्रेण सत्यस्यापिहितं मुखम् ।
तत्त्वं पूषन्नपावृणु सत्यधर्माय दृष्टये ॥ *Iśopaniṣad,15*

८. नीहारधूमार्कानिलानलानां खद्योतविद्युत्स्फटिकशशीनाम् ।
एतानि रूपाणि पुरःसराणि ब्रह्मण्यभिव्यक्तिकराणि योगे ॥
Śvetāsvara Upaniṣad II,11

९. तस्य हैतस्य पुरुषस्य रूपं यथा महाञ्जनवासो यथा
पाण्डवादिकं यथेन्द्रगोपो यथाऽग्न्यर्चियथा पुण्डरीकं
यथा सकृद्विद्युत्ते ह वास्य श्रीर्भवति य एव वेद ॥
Bṛhadāraṇyakopaniṣad,II,3,6

१०. अथ यदतः परो दिवि ज्योतिर्दीप्यते .....तदिदमस्मिन्नन्तः पुरुषे
ज्योतिस्तस्यैषा दृष्टिर्यैत्रैतदस्मिन्शरीरे संस्पर्शेनोष्णिमानं विजानाति ।

११. दिवि सूर्यसहस्रस्य भवेद्युगपदुत्थिता ।
यदि भा सदृशी सा स्याद्भासस्तस्य महात्मनः ॥ *Gita,XI,12*

१२. किरीटिनं गदिनं चक्रिणं च तेजोराशिं सर्वतो दीप्तिमन्तम् ।
पश्यामि त्वां दुर्निरीक्ष्यं समन्ताद्दीप्तानलार्कद्युतिमप्रमेयम् ॥ *Ibid,XI,17*

१३. पश्यामि त्वां दीप्तहुताशवक्त्रं स्वतेजसा विश्वमिदं तपन्तम् । *Ibid, XI,19*

१४. अयमग्निर्वैश्वानरो योऽयमन्तः पुरे....तस्यैष घोषो भवति
यमैतत्कर्णौपिधाय शृणोति *Bṛhadāraṇyakopaniṣad,V,9,I*

१५. तदस्मिञ्छरीरे संस्पर्शेनोष्णिमानं विजानाति..यत्रैतत्कर्णैवपि गृह्णतः
निनदमिव नदथुरिवाग्नेरव ज्वलत उपश्रृणोति
Chāndogyopaniṣad,III,13

१६. हिरण्मये परे कोशे विरजं ब्रह्म निष्कलम् ।
तच्छुभ्रं ज्योतिषां ज्योतिस्तद् यदात्मविदो विदुः...
Mundakopaniṣad II,39

१७. सर्वं हंसवशान्नादो दशविधो जायते ।
चिणीति प्रथमः चिञ्चणीति इति द्वितीयः ।
घण्टानादस्तृतीय शरंवनादश्चतुर्थम् ।
पञ्चमस्तन्त्रीनादः षष्ठस्तालनादः ।
सप्तमो वेणुनादः अष्टमो मृदङ्गनादः ।
नवमो भेरीनादः दशमो मेघनादः । *Hamsopaniṣad*

१८. परामर्शस्वभावत्वाद एतस्य स्वयं ध्वनिः ।
तदोदितः स एव उक्तः परमं हृदयं महत् ॥
य खलु परावाभूपः स्वरसोदितो ध्वनिः अहं परामर्शात्पा नाद..

Tantraloka, IV,181

१९. नास्य उच्चारयिता कश्चित् कश्चित् प्रतिहन्त न विद्यते
स्वयमुच्चरते देवः प्राणिनामुरसि स्थितः ॥ *Ibid,182*

२०. मधु वाता ऋतायते मधु क्षरन्ति सिन्धवः । माध्वीर्नः सन्त्वोषधीः ।
मधु नक्तमुतोषसो मधुमत्पार्थिवं रजः । मधु द्यौरस्तु नः पिता ।
मधुमान्नो वनस्पतिर्मधुमाँ अस्तु सूर्यः । माध्वीर्गावो भवन्तु नः ।

Rigveda,X,90,6-9

२१. आनन्दो ब्रह्मेति व्यजानात् । आनन्दाद्धयेव खल्विमानि भूतानि जायन्ते ।
आनन्देन जातानि जीतानि जीवन्ति आनन्दं प्रयन्त्यभिसंविशन्तीति ।

Taittiriyopaniṣad,III,6,1

२२. आत्मैव सर्वभावेषु स्फुरन् निवृतचिद् .. शिवः । *Sivadṛṣti,V,2*
विवृता वेद्यनिराकांक्षा पूर्णा चिद् यस्य स
तथालक्षणः शिवः Com. on the above

२३. नान्तः प्रज्ञं न बहिष्प्रज्ञं नोभयतः प्रज्ञं ... *Mandukyopaniṣad,Mantra 8*

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Explorations in Consciousness and Inevitable Relevance of *Yoga*

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I

There is today an ascendancy of science and technology; and there is a general tendency to judge and evaluate any claim of knowledge by the application of standards and criteria of modern science and by its technological utilities.

There is a general, although unfounded, feeling that *yoga* will not be able to stand the scientific scrutiny, and there is thus even a tendency to posit some kind of polarity between science and *yoga*.

It is true that science has proved its claim as a potent means of knowledge and power. But at the same time, it has come to raise certain important problems for the solution of which it needs to look beyond its present assumptions and preoccupations. And, it would seem that in this forward search, it might cross the barriers that divide science and *yoga*.

There was a time when only the physical was regarded as real, and the systematic study of 'matter' was alone regarded as science. With the development of Biology, however, a slight modification emerged in the scientific world. For, Biology no longer deals with matter, but with 'life'. A greater change in the situation has arisen with the emergence of Psychology as a science. For, Psychology has made it evident that however we may try to explain the psychological phenomena in terms of the physical, there are certain essential functionings of the 'mind', such as those of *understanding*, which escape entirely the framework of physical interpretation. The Gestalt school of psychology, the Psychoanalysis, the Hormic Psychology, the Personalistic Psychology, and many other trends in modern research have brought to the fore some crucial data by strict scientific methods which have made Psychology essentially a science of the supraphysical.

In fact, even in material sciences themselves, there is now the admission of data which are so subtle that their physical verification *in themselves* is impossible. All this has led to the liberation of the modern mind from the rigid hold of the identification of the real with the physical and of the insistence of *physical* verification as the final criterion of scientific method.

But, if physical verification is impossible in regard to some crucial data, still verification of some kind must be employed in the scientific methodology. The question is: what kind of verification will it be, modern science is still in search of an adequate answer to this problem.

There is at present, both in philosophy and in science, a tendency towards an extreme empiricism. An attempt is being made to declare the Law of Causation and the Law of Uniformity of Nature, which have been so far the unquestioned foundations of scientific induction, as mere *fictions* of Pure Reason. Or else, can the *empirical* guidelines be empirically justified?

It is becoming more and more evident that there is probably no answer to this question, or else, the answer lies beyond its limited boundaries.

There is a further problem arising out of the fact that although science is a potent means of knowledge in the domain of facts, it is incapable of dealing with the realm of values. And in recent times, this problem of science *versus* values has come to occupy an important place in the context of the uses of science in the interests of the modern warfare. Also, the general confusion and breakdown in the system of values that were so long upheld by religion and ethics has added to the acuteness of the problem.

Once again, science has found no means to deal with this problem, except by resorting to non-scientific approaches.

In respect of all these problems, *yoga* claims to have solutions.

Yoga, as distinguished from Religion, has always been a *science* of the supraphysical, with its own proper methods of observation, experiment and verification. It has already developed a system of criteria and a system of general truths which are proper to the supraphysical.

It claims to have an access to the supraphysical, its phenomena, laws and principles; and with all this it proposes to give the needed help to science to cross over to the field of the subtle and the Invisible, and thus ensure a rapid progress of the search into the Unknown.

Yoga also claims to provide *empirical* proofs of the *fictions* of the Pure Reason, and to show that the Laws of the Uniformity of Nature and of Causality are no mere constructions but are real of the Nature of its phenomena. *Yoga*, however, enlarges the meaning of the *empirical* and embraces within its field not merely the physical, but all that is *experiential.*

On this basis, then, *yoga* promises to furnish the sure basis to the scientific inductive process.

In *yoga*, it is claimed, there is no polarity between facts and values. The very object of the yogic search is to discover the object that is at the same time the Supreme Value. *Yoga* is, thus, at once positive and axiological. To know a fact yogically is also to know its value.

yoga then promises to bridge the gulf between facts and values.

It is important to note that in the Indian tradition, there has never been any sharp conflict between *yoga* and science, and all sciences have accepted the *yogic* methods of knowledge, even when they employed the ordinary empirical methods widely.

It has been recognized in the Indian tradition that there are certain yogic states of consciousness in which knowledge reveals itself intuitively, that its veracity can be tested also by the ordinary empirical methods. Such has been the basis of the Indian system of Astronomy, Astrology, Medicine, Physics, Chemistry, Mathematics. It would be a great service to the advancement of knowledge if this basic relationship between science and yoga is re-established.

With this done, vast frontiers of knowledge seem to open their gates.

But, what about the world-negating tendency of *yoga*?

Undoubtedly, if there is to be a true reconciliation of science and *yoga*, there has to be a correction of this world-negating tendency of *yoga*.

At the same time, it would be stressed that world-negation is not one single tendency of *yoga*, and *yoga* should not be judged merely by one of its tendencies, however powerful it may be.

It is true that behind this world-negation there lies a great truth and an overwhelming spiritual experience verified, again and again, by many whose search and discipline and realization cannot be in doubt. And, yet there are other spiritual tendencies and experiences equally verified in the same way and claim to go beyond that world-negating experience.

The conflict of spiritual experiences is an important problem for *yoga* to resolve, and this must constitute a fresh field of yogic research. As a result of this research, we may arrive at a conclusion which might, as in the Bhagavadgita, affirm the reality of the world and the value of work in the world even much more positively than what can be warranted or inspired by modern science or the general impulse towards activism.

But in some such result, the conflict between *yoga* and science would disappear totally, and there would result a complete fusion of science and *yoga*.

Already a great research has been made in this direction, and the results of this research need to be brought forward before the seeking consciousness of the humanity.

If *yoga* is not a negation of life, if there is no opposition between the aims of *yoga* and science, if thus, there is an inherent unity of *yoga* and science, we can hopefully look forward to a unified service of *yoga* and science to the highest need of mankind on the earth.

Whatever may be the academic climate resulting from the problems of the reconciliation of science and values, science has always cherished the value of man and it has been one of the potent forces working for the unity of mankind. Humanism and Internationalism have grown with the growth of science, and in numerous ways, science and scientists all over the world have endeavoured indefatigably for the application of scientific knowledge towards the alleviation of suffering, eradication of ignorance, and elimination of poverty and want. And with its

prospective thrust, it has begun to dream of the physical conquest of death, to express an insatiable thirst for knowledge, to work out something like a terrestrial omnipotence for humanity.

Not merely satisfied with the unraveling of the mysteries of the physical universe, modern science is turning decisively to the unveiling of the mystery of Man the Unknown. And a significant conception which has emerged is that of an all-embracing evolutionary process, in terms of which, it is hoped, man will one day be truly understood and helped.

This idea of evolution is being universally accepted, and everywhere its impact is felt. In the realm of Philosophy, this idea has become a source of fruitful speculations regarding the destiny of man, and these in turn have raised the question if evolution is merely a development of physical forms or if there is some occult operation of consciousness causing the outer physical development and mutations.

It is being increasingly realized that the problems that man confronts are the result of the consciousness in which he dwells. And, it is undeniable that the problems that man faces today are so complex, so critical, so global as they have never been in his history. Has this situation not to do centrally with the consciousness of man? And, if we are keen to resolve this situation, is it not necessary to study deeply man's consciousness, its relation to his problems and to find a solution to these problems in terms of a radical change of his consciousness? And in that case, shall we not find *yoga*, which is not only a science of consciousness, but also a technology of the change of consciousness to be indispensable in the further progression of man?

That consciousness of man is greatly influenced by the *unconscious*, has largely come to be accepted all over the world. And, modern medicine has accorded a place to psychiatry in the treatment of certain diseases. The concept of mental health and its relation to various elements of consciousness has also come to be accepted. But if, as *yoga* affirms, there are not only the subconscious and the conscious, but even the subliminal and the

superconscious and if the laws of these in relation to cure and health are studied, there could occur a revolutionary change not only in the practice of psychiatry or of mental health, but even in our approach to medicine itself. It may have a result even on the knowledge of our body, its functioning, its possibilities and its future.

One of the important problems that still remain unsolved is that of 'death'. What is death? Is death inevitable? Is it merely a habit? Or, is it something inbuilt in the very structure of the body? Has this structure anything to do with our consciousness? And, can this structure be changed by a revolutionary change in consciousness as is sometimes claimed by *yoga*? In that case, can death be eliminated by *yoga*? And, what would this mean in terms and processes and methods that would be involved in the elimination of death? Would it mean a complete change of the human body, its need of blood circulation, food and oxygen? Recent research in *yoga* has raised all these important problems not merely as matters of fascinating curiosity or in pursuit of some ambition to conquer death and enjoy the round circle of life perpetually, but as something so relevant to understand man himself, his place in the evolutionary process, his function as a species.

Man and his crisis, man and his limitations, man and his death, man and his evolutionary future, man as a species preparing a new species—all these seem to be related to each other, and they all seem to point to the mystery of man's consciousness. *Yoga* as a science of consciousness promises to hold the key to this mystery and in the critical urgency of the human situation, we feel impelled to knock the doors of *yoga* in the hope that these portals will open and show us the way. Or, if the way is still not ready with all its past and present achievements, we shall march with *yoga* to build it.

It has been said that *yoga* was for long kept secret for a select few, but the time has come now to generalize it in humanity. Indeed, the pressure of our crisis leads us to feel that even we of ordinary humanity must turn to *yoga*.

II

Yoga has been regarded primarily as a science of consciousness, the science of Psychology, *par excellence.* One of the most striking ideas that *yoga* puts forward is that no observation can be impartial or objective so long as there are modifications in the consciousness that observes. Even the so-called scientific observations of the scientists would not merit the title of objectivity in the realm of yoga, unless the scientist is free from the *chittavritti,* modifications of the stuff of his consciousness. There is, according to *yoga*, a state of consciousness, the state of pure witness, the *sakshin,* without any ripple whatsoever, free from all partiality or narrowness, which alone can comprehend the objective fact objectively, without any personal bias, without any relativity. This is the phenomenon of the pure subject observing the object as it is, in itself.

It is important to note that the science of *yoga* admits as its data only those observations which qualify this rigorous test of objectivity.

It is in this context that we may note that the *Vedic* and *Upanishadic yoga* regard the whole gamut of our existence to be a manifestation of a single conscious principle. Mind and body are not basically different from each other. Not only that, they also point to the phenomena which cannot ordinarily be covered under what we mean by the word *mind.* Indeed in all schools of yoga, we have a distinction between consciousness and mind, in the sense that consciousness is a large complex of awareness, while mind is only a limited or a selected overt portion of that awareness. In the view of the comprehensive system of *yoga*, consciousness has a range which rises above our ordinary mind, and it has a range below it which may properly be termed as subconscient. Body, too, has or is itself a formation of consciousness, most of whose operations are subconscious. Mind itself is an intermediate status of consciousness. For, it is recognised that behind our ordinary mental consciousness, there is the subliminal consciousness, and above the mind. there are ranges of the superconscious.

In modern times, the phenomena of the subliminal consciousness are being studied (although not fully or even adequately) by the Psychical Research—the phenomena of extrasensory perception, such as, telepathy, telekinesis, foreknowledge and allied or cognate operations. But in India, there are schools which specialized in the study of this range of consciousness. And, in the system of the *tantra*, we have a remarkable body of the application of the knowledge of the subliminal or occult consciousness.

The subliminal has to be distinguished from the subconscious. The subconscious is the consciousness which is emerging from a condition of the sleep of consciousness; it is a consciousness in the process of waking but which does not wake up, although it is active and operative and produces effects upon the conscious life and its movements. It covers what Freud calls the *Id,* and also what Jung calls the *individual and collective unconscious.* It is the region in which our suppressed desires and wishes find their resort and from where they surge up during our dreams or during our physical and mental illness. It is the abode of the roots of habits, and it is the cause of repetitions of the thoughts, feelings and emotions which we have consciously rejected. It is, in short, a lair of dark and dumb surges of consciousness.

The subliminal, on the contrary, is a field of what are called the inner sheaths or *koshas.* There is, according to the *yogic* knowledge, a sheath of the subtle physical behind our gross body. Similarly, behind the complex of our desires, emotions and superficial or deep-seated longings and attractions and repulsions, in short, what we may call the superficial vital being, there is the inner vital which is the source of our larger and wider action which is the cause of our frequent or rare outbursts of exhibition of superhuman strength and power. There is also behind our groping and labouring mental operations of perceptions, observation, imagination, ratiocination and pragmatic cunning and invention, an inner mental consciousness full of large and vast symptoms of ideas and images, clearly and systematically organized. The subliminal consciousness is what is popularly called the occult

consciousness, the consciousness that is manifest in the phenomena of clairvoyance, telepathy, foreknowledge and cognate phenomena.

It has been affirmed that dreams are built not merely by the subconscious, but also by the subliminal consciousness. And, just as the subconscious has its own symbolism, the subliminal, too, has its own symbolism, a notation of its own language. As explained by Sri Aurobindo:

If the subliminal... comes to the front in our dream consciousness, there is sometimes an activity of our subliminal intelligence, ... dream becomes a series of thoughts, often strangely or vividly figured, problems are solved which our waking consciousness could not solve, warnings, premonitions, indications of the future, veridical dreams replace the normal subconscious incoherence. There can come also a structure of symbol-images, some of a mental character, some of a vital nature: the former are precise in their figures, clear in their significance; the latter are often complex and baffling to our waking consciousness, but if we can seize the clue they reveal their own sense and peculiar system of coherence. Finally, there can come to us the records of happenings seen or experienced by us on other planes of our own being or of universal being into which we enter: these have sometimes, like the symbolic dreams, a strong bearing on our own inner and outer life or the life of others, reveal elements of our or their mental being and life - being or disclose influences on them of which our waking self is totally ignorant; but sometimes they have no such bearing and are purely records of other organised systems of consciousness independent of our physical existence.."[1]

There is a misconception regarding *yoga* in which *yoga* is exclusively identified with occultism or with the powers and so-called miracles that can take place when the subliminal consciousness operates effectively or visibly in the physical. The true *yogins* have repeatedly denounced this misconception and

affirmed that the central occupation of *yoga* is the inmost discovery of the soul and of the levels and powers of consciousness that lie behind or above the mind.

The subliminal is vast, large, powerful and organized but it is still remote from what *yoga* terms as knowledge, *vidyā*. Knowledge is a perception or realization of one Self in all, while in ignorance, *avidyā*, there is a false idea of the multiplicity as self-existent or of the individual as however vast and potent, is still shot through and through with this ignorance.

The science of *yoga*, therefore, in its understanding of consciousness, insists on the distinction between the subliminal on the one hand, and the psychic and the superconscious, on the other.

Of the soul, of the psychic consciousness, and of the superconscious, there are, in *yoga*, numerous descriptions; among the Sufis, among the Christian mystics, among the Lamas, there are parallels in their descriptions, and in the Indian *yoga* itself there are various classifications of the states of consciousness that pertain to these domains. The release from the ego, the realization of the Self, of the Cosmic Consciousness, of the Transcendental Consciousness — these are among the most fundamental. *Nirvana* and *advaita*, *vishishtadvaita* and *dvaita*, *purusha* and *prakriti*, *brahman* and *maya*, *ishwara* and *shakti* and hundred other similar concepts have behind them the experiences and realizations which are of central significance to *yoga*. And, pertaining to each experience and each state of consciousness there are numerous powers of action, and at various levels of being they have varying degrees of effectivity. All these have been explored, experimented with, verified, and we have in *yoga* a rich, complex, subtle and authentic body of knowledge. *Yoga* further affirms that it is not a closed book, but an ever-developing field of research. And, in modern India, we have not only a recovery of the past knowledge, but as in Sri Aurobindo, new discoveries, new applications of the knowledge, new achievements, new proposals for further realisations. The concepts of the descent of the supermind on the

earth, of the Gnostic Being, of the Divine Body are some of the results of the recent yogic research.

It may be noted that the science of *yoga* not only provides us with the knowledge of the various states and levels of consciousness, but it gives us also the practical methods of verifying them by a fresh achievement in our own being. And, these methods again are numerous, and pertaining to each method, there are steps and stages, and for each of them there are, appropriate states and powers of consciousness. These, too, have been studied, experimented with and known with authenticity of verifiable repeated and repeatable experience. Even the minute vibrations of consciousness have been noted and described with precision; fine distinctions have been stressed; subtle variations of the methods and processes, whether of *raja yoga* or *hatha yoga* or *karma yoga* or *jnana yoga*, of *bhakti yoga* or of *tantra* have been studied in detail. All in all, we have a vast and opulent treasure of the knowledge of consciousness, in *yoga*.

III

History of Indian culture may significantly be described as the history of the theme of consciousness, and its supreme achievement has been the development of the science of consciousness and practical application of that science. This entire science is the science of *yoga*. Right from the times of the *Veda* up to the present day, we find extraordinary explorations of consciousness. Vedic *rishis* attained, as the *Vedas* testify, loftiest domains and powers of consciousness. And, the *yoga* that we find in the *Vedas* is the synthesis of *yoga*. For this reason, *Veda* is known as the Book of Knowledge *(jnāna-kānda)*, Book of Work *(karma-kānda)*, and Book of Prayers *(upāsanā-kānda)*. Describing the attainment of these *Vedic rishis*, Sri Aurobindo states as follows:

They may not have yoked the lightning to their chariots, nor weighed sun and star, nor materialised all the destructive forces in Nature to aid them in massacre and domination, but they had measured and fathomed all the heavens and earths

within us, they had cast their plummet into the inconscient and the subconscient and the superconscient, they had read the riddle of death and found the secret of immortality; they had sought for and discovered the One and known and worshipped Him in the glories of His light and purity and wisdom and power."[2]

Ishopanishad describes the loftiest experiences of consciousness, where the individual, universal and the transcendental unite in the following verses:

"But he who sees everywhere the Self in all existences and all existences in the Self, shrinks not thereafter from aught.

He in whom it is the Self-Being that has become all existences that are Becomings, for he has the perfect knowledge, how shall he be deluded, whence shall he have grief who sees everywhere oneness?"[3]

Describing the journey of *yoga* of *Ayasya,* the *Rigveda* speaks of the seven-headed Thought by which the lost sun of Truth is recovered. Again, it is this *yogic* journey that ends in the discovery of the fourth world, *turiyam svid,* the world of the supermind spoken of in the *Veda* as the world of Truth, Right and Vast — *satyam, ritam, brihat.* Describing the process of *yoga* in its essential characteristic, the *Rigveda* states:

"They held the truth, they enriched its thought then indeed, aspiring souls (aryah), they, holding it in thought, bore it diffused in all their being."[4]

We also find in the *Veda* a description of the culminating experience of immortality in the following words:

"They who entered into all things that bear right fruit formed a path towards the immortality; earth stood wide for them by the greatness and by the Great Ones, the mother Aditi with her sons came (or, manifested herself) for the upholding."[5]

In one of the most illuminating passages of the *Ishopanishad,* we have a brief description of the passage of the *yogic* process from where the face of Truth is covered to the point where the supreme light and knowledge are realised:

"The face of Truth is covered with a brilliant golden lid, that do thou remove, O Fosterer, for the law of the Truth for sight.

O Fosterer, O sole Seer, O Ordainer, O illumining Sun, O power of the Father of creatures, marshal thy rays, draw together thy light, the Lustre which is thy most blessed form of all, that in Thee I behold. The Purusha there and there, He am I."[6]

It is significant that the yogic process which began with the *Veda*, culminated in the first cycle of knowledge in the *Upanishads*, which are called *Vedanta*, giving us the indication as to how and when the true soul of India was born. The description that we find in a few pages of the *Upanishads* restore for us the picture of that extraordinary stir and movement of spiritual inquiry and passion for the highest knowledge. It is in these *Vedas* and *Upanishads* that we find not only the sufficient fountainhead of Indian philosophy and religion, but of all Indian art, poetry and literature. It is there that we find the soul, the temperament, and the ideal mind which later ripened into what we now call Indian genius of spirituality, intellectuality, askesis and vitality.

The development of the science of *yoga* can be seen in a new stage of synthesis when we come to the *Bhagavadgita*. The *Bhagavadgita*, which is known as the *Yoga Shastra*, provides us profound secrets of knowledge and application of knowledge by means of which human consciousness can be transformed into Divine consciousness. The first secret, *guhyam rahasyam,* is to find out how the field of circumstances in which one is placed can be apprehended or comprehended and mastered. This secret is the knowledge of the distinction between the field of circumstances and the knower of the field, *kshetra* and *kshetrajnà*. There is, behind and above the field of circumstances, the secret consciousness that can be experienced as a silent witness, *purusha* or as a transcendental immobility, *Brahman* or as the controlling and ruling giver of sanction and master, *anumanta* and *ishwara*. One of these experiences or all of them together can provide a

sure basis of freedom from the tangles of the problems that the field of circumstances and the battle of life present to us by means of an interplay of the three *gunas* of Nature, *sattwa, rajas,* and *tamas.* But at this level of experience, although there is here freedom *from* action and its problems, one does not yet have the key to the freedom *of* action, freedom *in* action and freedom to disentangle the knots from the problems and their gripping difficulties. For that we need to have a deeper secret, *guhyataram rahasyam,* the secret of the origin of Nature in a higher Nature, the origin of *apara prakriti* in the *para prakriti,* where is also to be found the origin of multiple individualities which are the centres of the Supreme Self, *Purushottama,* who at once reconciles and synthesizes the status of *purusha, brahman* and *ishwara.* And, the knowledge of this higher Nature not only liberates us from the tangle of Nature, but gives us also the capacity to harmonize various threads of Nature which would even allow the transmission of the dynamic and creative action that would resolve the knots and problems of all our activities of life. This is the knowledge by which the cognitive, affective and conative powers of our psychology can be perfected, and synthesis of *karmayoga, jnanayoga* and *bhaktiyoga* can be effected. But, there is still a culmination of this deeper secret; there is still the deepest secret, *guhyatamam rahasyam.* This secret is that of the possibility of the transmutation of lower nature by higher nature, of the attainment of *sadharmyam,* where human law of action is substituted by the divine law of action. And, the secret method is to move at a stage where all that one is or one has is reposed unconditionally in the hands and in the being of the Supreme, as a result of which all that flows through the individuality is the incorruptible breath of the Supreme which unites Truth, Beauty and Goodness and constantly creates conditions suitable for the unity and harmony of the people, *lokasangraha.*

The subsequent history of *yoga* is an account of specialized schools of *yoga*, each one of which is distinguished by a specific goal, a specific instrument of human psychology that is utilized for its perfection, and a specific purpose of concentration. These

systems of *yoga* provided intensive fields of experimentation, each one realizing in greater subtlety of realization as also enrichment of the common goal of *yoga*. In a later development in the *yoga* of *tantra*, we find another basis of a synthesis in which the aspect of *shakti* is prominently utilized for the attainment of a large and integral realization of the Supreme Reality. In our own times, we find Sri Ramakrishna Paramhamsa providing us a synthesis of *yoga* by his colossal spiritual capacity, and in the words of Sri Aurobindo:

"*...first driving straight to the divine realisation, taking, as it were, the kingdom of heaven by violence, and then seizing upon one Yogic method after another and extracting the substance out of it with an incredible rapidity, always to return to the heart of the whole matter, the realisation and possession of God by the power of love, by the extension of inborn spirituality into various experience and by the spontaneous play of an intuitive knowledge.*"[7]

We have also in the works of Swami Vivekananda inspiring accounts of various systems of *yoga* in large catholic and synthetic terms. In Sri Aurobindo, we have still a new synthesis which is effected by negating the forms and outsides of the *yogic* disciplines and seizing rather on some central principle, common to all which includes and utilizes in the right place and proportion their particular principle, and some central dynamic force which is the common secret of the divergent methods and capable of organizing a natural selection and combination of their varied energies and different utilities. Describing this process of synthesis and its aim, Sri Aurobindo states:

"*The lower Nature, that which we know and are and must remain so long as the faith in us is not changed, acts through limitation and division, is of the nature of Ignorance and culminates in the life of the ego; but the higher Nature, that to which we aspire, acts by unification and transcendence of limitation, is of the nature of Knowledge and culminates in the life divine. The passage from the lower to the higher is the aim of yoga; and this passage may effect itself by the rejection of the lower and escape into the higher,... the ordinary*

viewpoint,... or by the transformation of the lower and its elevation to the higher Nature. It is this, rather, that must be the aim of an integral Yoga.

...The whole life is the Yoga of Nature. The Yoga that we seek must also be an integral action of Nature, and the whole difference between the Yogin and the natural man will be this, that the Yogin seeks to substitute in himself for the integral action of the lower Nature working in and by ego and division the integral action of the higher Nature working in and by God and unity. If indeed our aim be only an escape from the world to God, synthesis is unnecessary and a waste of time; for then our sole practical aim must be to find out one path out of the thousand that lead to God, one shortest possible of short cuts, and not to linger exploring different paths that end in the same goal. But if our aim be a transformation of our integral being into the terms of God-existence, it is then that a synthesis becomes necessary."[8]

IV

As we approach the philosophy and practice of *yoga*, we find that there are two things that cannot be doubted. There is, first, the experience of our individual entity as an observer who observes, experiences, acts and reacts. There is, second, a field of circumstances in which the individual finds himself or herself and in which he or she works, learns and struggles to arrive at mastery. Arrival at this mastery, individual and collective, may be considered to be the realization of human fulfilment.

The history of the world may be regarded as an account of the human aspiration towards human fulfilment. It manifests itself in the drive towards knowledge, possession, and enlargement into a vast and universal and transcendental being so as to grow out of the animal and egoistic consciousness. This aspiration strives to convert our twilight or obscure physical mentality into the plenary supra-mental illumination, to build peace in self-existent bliss where there is only a stress of transitory satisfaction besieged by physical pain and emotional suffering. This aspiration strives to establish an

infinite freedom in a world which presents itself as a group of mechanical necessities. It also strives to discover and realize the immortal life in a body subjected to death and constant mutation.

If this aspiration is to be fulfilled, there does not seem to be another way excepting the way of the *yoga*, and this way, as latest researches in *yoga* indicate, is the way of the synthesis of *yoga*, which aims at total freedom of each individual in his or her method of approach and which aims at integral development of personality and integral self-perfection by the expression of the potentialities latent in the being and the union of the human individual with the universal and transcendent Existence which we see partially expressed in the human being and cosmos.

Yoga, then indeed, stands out as a subject of great contemporary relevance. This relevance arises from the acute crisis through which humankind is passing today. This crisis has arisen, it seems, from the fact that, while on the one hand, it does not seem unlikely that we may succeed in creating a system of life, practically covering the whole globe, which can provide to human beings means and materials to satisfy hedonistic, selfish and egoistic wants on such a scale that for quite a long indefinite period, humankind might remain chained to circles of lower life marked by hunger and satisfaction, strife and success, and perils of small and great disasters, and yet, on the other hand, the upward human aspiration to build individual and collective life on the basis of mutuality and harmony, of peace and concord, and ever-increasing perfectibility of our highest potentialities must continue to struggle without any sound promise of its eventual fulfilment. In other words, while there is an upward endeavour to break the vicious circle of our present vitalism or economic barbarism, this very endeavour has come to be partly discouraged by the scientist by his demand to provide physical proof of the supra-physical and partly blocked by the religionist by his refusal to look beyond dogma and the revealed word of the past, and has thus come to be rendered unequal to the required tasks.

The vicious circle can be broken only if our upward endeavour can get unmixed positive support from science and only if the

moral and spiritual foundations can be strengthened and made increasingly unshakable.

This is the real issue.

It has been contended that all true knowledge belongs to science and can be acquired only by scientific methods. Morality, it is argued, is a matter of emotional responses which are themselves relative and carry no authenticity of knowledge in their contents or in their foundations. As far as spirituality is concerned, it is argued that its claims in regard to its insights, intuitions, revelations and other allied operations of knowledge are at the best occasional flashes, somewhat like conjectures which may sometime hit the truth but which escape from any systematic scrutiny by means of criteria that can confidently be applied in any impartial search of validity of knowledge. It is, therefore, concluded that spirituality is a field of light and shadow where it is difficult to distinguish what really is light and what really is shadow.

Now, it is true that morality is a field of relativities and that if its claims of knowledge of the good and the right are to have some secure foundation, it can find these foundations only in a field which is higher than morality, namely, the field of spirituality. But, if spirituality itself is a field of uncertainties besieged by doubtful lights and shadows, we are thrown back into the vicious circle of vitalism which cannot be broken.

But, is it true that spirituality is a field of uncertainties, of occasional flashes of light and of doubtful intuitions and revelations? It is here that the claims of *yoga* need to be taken into account. For, *yoga* claims to be, among many other things, a methodized quest of spiritual and eventually of integral knowledge which is found to have succeeded in arriving at certain stable states of consciousness and of plenary illumination and knowledge of truths which can be verified both objectively and in personal experience by means of criteria which can be considered to be as sound as in any inquiry relating to validity of knowledge. In other words, *yoga* claims to be a scientific discipline through which authentic knowledge can be gained in regard to any object, particularly,

universal or transcendental, on which its methods are applied systematically and repeatedly.

It can at once be seen that if these claims of *yoga* are valid, then we shall be able to have through *yogic* methods that knowledge which can possibly break the vicious circle of the crisis of the present day and deliver us into new possibilities of a better humanity and a better world.

The next question, therefore, before us is whether the claims of *yoga* are truly valid and whether they can be found to be sustainable. It has been contended that *yoga* has discovered and perfected certain specific methods by application of which human consciousness can be so revolutionized that the ordinary functioning of the human body, human heart, and human mind can be united with superior faculties of knowledge and action, and ultimately the human being can become permanently united with the universal and transcendental states of consciousness and knowledge. It has been further contended that the *yogic* science possesses assured data of the knowledge of methods and their processes of application as also of their corresponding results. It has even further been contended that the efficacy of these methods and their results can be verified by everybody who is prepared to undergo the necessary preparation and training, and that the results obtained by others can be confirmed through one's own personal experience and can be utilized for producing relevant consequences and results. Finally, it is added that there is a long history of the development of this science of *yoga*, and as in the case of the history of development of any science, one can trace a credible account of the old methods and old knowledge, of how they have gradually grown and developed by methods of confirmation, modifications and fresh developments resulting from new experiments and fresh acquisitions of knowledge. It is, therefore, concluded that *yoga* provides a sound basis of a vast field of knowledge which can even now be studied and reacquired by the present humanity, and that without any need of falling into any trap of dogmatism, blind belief, superstition or even of half-knowledge and half-blindness,

we can come to tap those resources of knowledge which can provide us the required guidance for the building up of a world illumined by ever-progressive knowledge and inspired by universal love.

These contentions and the conclusions to which they lead are so important that they deserve to be heard and noted with utmost seriousness, and they also deserve to be studied in full depth with all the required objectivity and even microscopic scruple so that whatever gates of knowledge that *yoga* can open up before us are entered into, and we are enabled to ensure that no possibility or avenue of knowledge that we require to break the present crisis has been ignored or allowed to remain under clouds of our dogmatic refusal to inquire and to learn.

This is where we stand today, and the situation in which we find ourselves today demands on our part a serious inquiry and study of the entire theme of *yoga* and Consciousness. Our study will show that the supreme gift of India to itself and to the world is the knowledge of *yoga* and the practice of *yoga*, for *yoga* is a discipline that can give us the true basis for the hope of arriving at a true individual and collective fulfilment.

References:

[1] Sri Aurobindo: *The Life Divine, Centenary Edition, Volume 18, pp.424-25*

[2] Sri Aurobindo: *The Secret of the Veda, Centenary Edition, Volume 10, p. 439*

[3] यस्तु सर्वाणि भूतान्यात्मन्येवानुश्यति ।
सर्वभूतेषु चात्मानं ततो न विजुगुप्सते ॥६॥
यस्मिन् सर्वाणि भूतान्यात्मैवाभूद्विजानतः ।
तत्र को मोहः कः शोक एकत्वमनुपश्यतः ॥७॥ *Ishopanishad, 6,7*

[4] दधन् ऋतम् धनयन् अस्य धीतिम् ।
आद् इद् अर्यो दिधिश्वो विभृत्राः ॥ *Rigveda, 1.71.3*

[५] आ ये विश्वा स्वपत्यानि तस्थुः कृण्वानासो अमृतत्वाय गातुम् ।
महना महद्भिः पृथ्वी वि तस्थे माता पुत्रैः अदितिः धायसे वेः ॥ *Rigveda, 1.72.9*

[6] हिरण्मयेन पात्रेण सत्यस्यापिहितं मुखम् ।
तत् त्वं पूषन्नपावृणु सत्यधर्माय दृष्टये ॥१५॥
पूषन्नेकर्षे यम सूर्य प्राजापत्य व्यूह रश्मीन् समूह ।
तेजो यत् ते रूपं कल्याणतमं तत्ते पश्यामि
याऽसावसौ पुरूषः सोऽहमस्मि ॥१६॥ *Isha Upanishad, 15,16*

[7] Sri Aurobindo: *The Synthesis of Yoga, Centenary Edition, Volume 20, page 36*

[8] Sri Aurobindo: The *Synthesis of Yoga, Centenary Edition, Volume 20, pp. 39-40*

The 'Mechanistic' View of Nature – Its Refinements and Relevance to Consciousness

N. Mukunda

Introduction

In interdisciplinary meetings seeking ways to understand Consciousness from a scientist's perspective, it is natural that each of us brings facts, concepts and principles from her or his own area of specialisation and presents them to a wider audience, in the hope that they may be useful in comprehending Consciousness. Several presentations in earlier meetings in this series followed this pattern and I will refer to some of them later.

Changing Concepts in Physical Science

A general feature in the process of achieving a scientific understanding of any phenomenon is that the initial attempts are naturally to relate the new to things we already know and understand. When such attempts repeatedly fail, then something radically new has to be looked for. Scientific understanding is always the result of a struggle, it never comes easily or cheaply. I would like to recall briefly a few instances of changing, even fluctuating, concepts from the history of physics.

Newton's Law of Universal Gravitation was based on the idea of matter acting on matter across empty space, an action at a distance. Before this, there was Descartes' idea of action by contact, expressed through his concept of vortices. Newton's formulation was very successful, and the Cartesian picture was gradually given up. But, the idea of action at a distance also took time to gain general acceptance. Even Newton himself privately expressed doubts, in a letter to Richard Bentley, and the feeling

that it was unreasonable; but empirical successes finally ruled in its favour, and it was later extended to electricity and magnetism as well.

The ideas of phlogiston and caloric — to explain combustion and heat flow — are later instances of trying to explain the unknown in terms of the familiar. The growing science of chemistry took care of phlogiston, while the final understanding of heat as mechanical energy of molecular motions took some time to be accepted. In the meantime, at the fundamental level, there was a swing back from action at a distance to action by contact in the context of electromagnetism. The heroic work of Faraday followed by Maxwell led to the field becoming an essential, independent and irreducible constituent of Nature in addition to matter. But here again, for quite a while Maxwell tried to invent mechanical gears-and-wheels models for electromagnetic processes, and retained the aether as a mechanical medium to carry electromagnetic waves. Lorentz and Poincare too believed in the aether. Only after the coming of Special Relativity was the aether finally given up; unlike heat or sound or water waves, electromagnetic waves could not be reduced to mechanical motions.

In the case of light too, there have been swings from the corpuscular ideas of Newton to the waves of Huyghens and Thomas Young, unified by Maxwell with electromagnetism; and then a century ago a return to the corpuscular viewpoint in a far deeper sense in Einstein's work.

Here are some more remarkable instances of attempts to reduce the unknown to the known, which sometimes succeeded and sometimes failed. The planet Uranus was discovered by William Herschel in 1781. Then it turned out that there were discrepancies between observations, and the motions calculated using Newton's theory. Around 1845, John Adams and Leverrier independently suggested they may be due to an as yet unknown planet; and based on their calculations they told the astronomers where to look for it in the heavens. It was thus that Neptune was found in 1846 by Johann Galle at precisely the predicted position. Later,

when similar discrepancies arose in the case of Mercury, it was naturally thought that a hitherto unknown planet Vulcan was the cause. But, no Vulcan was found, and the final explanation came from an entirely unexpected direction in 1915 — General Relativity!

These few examples illustrate how our understanding of physical phenomena is always an evolving process, there are really no final answers. As new features of Nature are revealed with improved skills, we often have to go back and revise previously accepted notions, so this is always an unfinished enterprise.

Picturing the new in terms of the old also shows up in proposing models of the brain. In the 19th century, it was probably often compared to a calculating machine – a gears-and-wheels approach! With the growing sophistication of 20th century technology, it is nowadays compared to a computer with hardware and software components, memory is related to the principles of holography, functioning to parallel or distributed computing, and so on.

Expectations of a Theory of Consciousness

I would now like to suggest some guiding principles to be kept in mind in attempting a scientific understanding of Consciousness, and also to describe the great changes that have occurred in the mechanistic or materialist view of Nature. It seems undeniable that, borrowing from Professor Nanjundiah's excellent presentation here in 2002:

(i) We must limit ourselves to *communicable* experiences and phenomena.

(ii) Consciousness is a phenomenon within the living world, which in turn is shaped by evolution guided by natural selection.

(iii) In the living world, Consciousness shows up at a continuum of levels of sophistication, from more primitive life forms to more highly developed ones, and always in conjunction with a central nervous system.

Thus, Consciousness is fundamentally linked to both life and evolution.

These ideas suggest that we look for a materialistic or a mechanistic understanding of Consciousness. Here I would like to refer to another excellent presentation in the 2002 meeting, that of Professor P.K. Mukhopadhyay contrasting the view points of 'Material Monism' and 'Spiritual Monism'. These philosophical systems are quite old, much older than modern science, and have great speculative and imaginative content. 'Material Monism' regards matter alone as real while Consciousness is an epi-phenomenon, a side effect; while in 'Spiritual Monism' the roles of matter and Consciousness are exchanged.

Refinements in the 'Mechanistic' World View

It seems to me that in talking of these two schools of thought, two forms of monism, we must take note of the great changes that have occurred in what is glibly called the 'mechanistic' view of Nature as a result of progress in physics. There have been deep and extraordinarily subtle conceptual advances in our understanding of natural phenomena, one may almost call them 'non material' in the sense that they are one step removed from what we directly observe; yet they are essential ingredients of the way the physical universe functions. We can say that they are movements away from the gross towards the subtle within the description of the physical universe, so a scientific account of Consciousness may well take advantage of them. Late in the 19th century, Lord Kelvin expressed the prevailing mechanistic world view in these famous words:

It seems to me that the test of 'Do we or do we not understand a particular point in physics?' is 'Can we make a mechanical model of it?'

We seem to have moved quite far from such a position in later times. We saw already that apart from matter, radiation is the other important constituent of Nature. Going further, quantum mechanics has unified the classical particle and field concepts into something so subtle that we have difficulties forming any mental picture of it at all! Then, the concept of symmetry in characterizing

physical laws on the one hand, and as a source of conservation laws on the other, is of overriding importance. The situation can be depicted as a triangle with three corners: laws of dynamics – their symmetries – the resulting constants of motion. Symmetry seems to lie at a deeper level, one step behind, concrete phenomena accessible 'to our senses'. While concrete phenomena directly accessible to our senses or instruments are described by various dynamical laws, various physical theories, their symmetry properties are much more abstract and are not embedded in space and time – they cannot be seen by the eye but only by the mind. This is so both in classical and in quantum physics, with respect to space time as well as so-called internal symmetries.

Newton's Third Law of motion was a statement of *reciprocal* influences between material bodies. It led to the first conservation law, that of linear momentum. Much later this was connected to the invariance of physical laws under translations in space, an expression of symmetry, and then greatly generalized. The beauty of this complex of ideas is that every physical entity which responds to or is acted upon by a given symmetry operation necessarily contributes to the associated conserved quantity. Thus, both matter and fields contribute to energy, momentum and angular momentum on an equal footing. The depth or profundity of these ideas can be expressed in this way: symmetries of the laws of change tell us what properties remain unchanged! This idea of different constituents of Nature contributing to phenomena and conservation laws reciprocally or on an equal footing is beautifully captured in this sentence from Einstein:

"It is contrary to the mode of thinking in science to conceive of a thing .... which acts itself, but which cannot be acted upon."

The context here was the determination and physical role of space time geometry as a part of physics, but we may do well to bear it in mind when thinking of Consciousness as well.

The Observable and the Unobservable, Quantum Properties

Here are two more instances of the thorough going refinement of the 'materialist' picture of Nature. In developing Special

Relativity, Einstein emphasized the need for utmost clarity at the level of definition and empirical observation in arriving at the basic notions of length, time and simultaneity. This emphasis on limiting oneself to observables had a profound influence on Werner Heisenberg in 1925 while discovering his matrix version of quantum mechanics. But when he said so to Einstein, the latter cautioned him in these words:

"..... on principle, it is quite wrong to try founding a theory on observable magnitudes alone. In reality the very opposite happens. It is the theory which decides what we can observe."

The very fact that such statements needed to be made shows how sophisticated physical theory has become! This has gone very far in quantum mechanics. Here we have to accept that all the physical properties of a system cannot be simultaneously measured and expressed as numbers. We have to learn to deal with them as much more abstract mathematical quantities, and we can attribute numerical values to one or another of them only when an observation and measurement has been made.

Going even further, we have the situation described by Niels Bohr's Complementarity Principle. When the *result* of some physical measurement is stated, the measurement *process* and *apparatus used* must also be stated, one cannot separate one from the other. When some quantities are successfully measured, the possibility of measuring many others must be given up or sacrificed. Thus, physical systems do not possess quantifiable properties autonomously or on their own. This is what makes it so difficult to make mental images of quantum systems and phenomena.

The dynamical law of quantum mechanics involves even greater subtleties. It is an equation for change in time of something called a wave function, which is not itself directly observable, but which we use to calculate the probabilities that various events or processes will occur. Can we 'directly' check that this Schrodinger equation is being obeyed as a system evolves? No! we can do so only indirectly by verifying the probabilistic predictions of the

equation! Any attempt to 'directly see' the Schrodinger equation 'at work' would interfere with its working!

And, even when the classical language of probability is brought in, it is a derived quantity, not truly fundamental, not a representation of ignorance; true quantum phenomena take place at a deeper level involving probability amplitudes, and of these we can make only imperfect pictures in our minds.

You can see the kinds of concepts and framework needed to formulate current physical theories, how much the older 'mechanistic' picture of nature has progressed. So, *this* is the kind of 'material' universe in which we live!

Turning now to attempts to understand Consciousness against this background: can we take advantage of the richness of concepts that present physical theory has to offer? We may ask: do the Uncertainty Principles and Complementarity Principle, and the general non-numerical framework of quantum mechanics, have any role to play in thinking about Consciousness? In a purely phenomenological approach to Consciousness incorporating objectivity and the continuum of levels of existence, we can ask: can the ideas learnt from quantum mechanics be exploited usefully? Whether or not Consciousness is itself a manifestation of quantum behaviour, can quantum notions be used in a new context? We can ask such questions even though the earlier notion that Consciousness itself may be needed for a consistent formulation of quantum mechanics has turned out to be misleading.

May be, with our accumulated experience in the extraordinarily subtle description of the physical universe, we can begin in the case of Consciousness by a careful phenomenological choice of variables, think about their simultaneous measurability or otherwise, about their couplings and changes in time, any fundamental role for probability, and so on. As is so often the case in physics, here too we may have to revise our initial notions several times as we go along. Ultimately, Consciousness may be a manifestation of the collective behaviour of billions upon billions of nerve cells and their connections. But, like the relationship between phenomenological

thermodynamics and the deeper microscopic statistical mechanics of atoms and molecules, we might search for simple descriptions of processes involving Consciousness using a small number of collective algebraic quantities, and later build up a continuum of more sophisticated descriptions as we proceed.

In all this, our experience in 'disentangling' the physical universe is available. The hope is that ultimately Consciousness can be explained by or reduced to physical processes, but see how subtle the 'mechanical' universe has turned out to be! Recall Einstein's words. 'One may say that the eternal mystery of the world is its comprehensibility'. And, see where we have been led in the effort to comprehend Nature! We should not be surprised at all if we encounter equally subtle concepts in understanding Consciousness, and if we have to revise our notions repeatedly.

1. References:

Prof. V. Nanjundiah, "An Evolutionary Approach to Consciousness";
Prof. P.K. Mukhopadhyay, "Explaining Consciousness: an alternative Philosophical perspective"; in '*Philosophy and Science: An Exploratory Approach to Consciousness*', The Ramakrishna Mission Institute of Culture, Gol Park, Kolkata 700 029, published in March 2003

2. Added comments based on questions raised in Discussion Session:

a) The Schrodinger 'Cat Paradox' is basically an attempt to show that a straightforward extrapolation of quantum mechanical behaviour to macroscopic phenomena would lead to bizarre consequences. A better understanding of the passage from the micro to the macro scale and the role of interaction with the environment is now available.

b) At one time, around the 1930's and even upto the 1950's it was thought that human Consciousness may be necessary to solve the measurement problem in quantum mechanics. If this were indeed so, then it is difficult to imagine a quantum mechanics-based explanation of Consciousness. Here too the situation has changed considerably, as is evident from this passage taken from Roland Omnes' '*Understanding*

Quantum Mechanics': On involving human Consciousness to 'solve' the measurement problem of QM:

"It is difficult to understand how this proposal, which was later developed by London and Bauer (1939) and upheld by Wigner (1967), could lure such clever people. The explanation is probably to be found in the cultural tradition of German philosophy, where one finds, for instance, the doctrine of correspondence between physical reality and human Consciousness, which had been postulated some time earlier by Ernst Mach and Richard Avenarius. The proposal seems incredible today not only because cognitive sciences have begun to unravel the working of the brain, but also because experimental data are now most frequently 'read' by computers and not by human beings.

I feel compelled to add here an aside. The story that great physicists would think of the human mind as the final actor in a measurement, as the deus ex machina transforming indeterminacy into reality, did not remain confined to the physics community. It was great news for the believers in parapsychology and all sorts of occultism: mind acts on matter! This is why, with all the respect one may have and should have for the people who went that far in their hypotheses, one's duty is to emphasize that there is no hint anywhere of its validity *and one doest not need it* ..... The story shows, nonetheless, how difficult the problems of interpretation were".

Roland Omnes, "*Understanding Quantum Mechanics*", 2001 Prentice Hall, India, p. 60-61

Bhavamukha—Sri Ramakrishna's Unique Contribution to the Science of Consciousness

SWAMI ATMAPRIYANANDA

1. *Rishis*, the Spiritual Scientists and Indian Spiritual Tradition

Swami Vivekananda, in his famous essay on *Hinduism and Sri Ramakrishna*, writes:[1]

"Truth is of two kinds: one, that which is cognizable by the five ordinary senses of man, and by reasonings based thereon; two, that which is congnizable by the subtle, supersensuous power of yoga. Knowledge acquired by the first means is called science; and knowledge acquired by the second is called the Vedas. ... The person in whom this supersensuous power is manifested is called a Rishi, and the supersensuous truths which he realizes by this power are called the Vedas. This Rishihood, this power of supersensuous perception of the Vedas, is real religion. And as long as this does not develop in the life of an initiate, so long is religion a mere empty word to him, and it is to be understood that he has not taken yet the first step in religion."

Indian spiritual tradition is the tradition set in motion by the *rishis*, the spiritual scientists who were constantly engaged in Consciousness research. The body of knowledge they had created through their research, investigation, exploration and insight into the mystery of Consciousness, through a perennial teacher-disciple succession (*guru-sishya parampara)*, forms the wonderful spiritual tradition of India, coming down to the present age of Ramakrishna-Vivekananda.

2. Two Great Spiritual Traditions, *Vedanta* and *Tantra*

Now, every scientific tradition has different groups of scientists, each with its own band of teachers and students who contribute to

the enrichment of the knowledge generated in their domains of interest. In the same way, groups of spiritual scientists pursuing their most absorbing area of Consciousness research have thrown up an amazing variety of theories, models and paradigms of Consciousness. The vast body of literature embodying these research studies is the wonderful spiritual tradition and heritage of India. Among these different models and paradigms, *Vedanta* and *Tantra* are two great systems that Sri Ramakrishna practised during his lifelong spiritual endeavour. *Vedanta* is the science of *Brahman* (*Brahma-vidya*), while *Tantra* is the corresponding technology, with *Brahma-Shakti* occupying the central throne. In *Vedanta*, *Brahman* is considered the Ultimate Reality, of the nature of Pure Consciousness, while in *Tantra*, *Brahma-Shakti* is the Power inhering in that Pure Consciousness, considered non-different from *Brahman*[2]. Sri Ramakrishna used to call *Brahma-Shakti* as *Jagadamba*, Divine Mother, Kali. Now, Divine Mother of the Tantra is the same as *Ishwara*, *Sopadhika Brahman* (that is, *Brahman* as associated with assumed limiting adjuncts) of Vedanta. Vedanta posits two forms of *Brahman*, *Sopadhika Brahman* and *Nirupadhika Brahman*—that is, *Brahman* associated with assumed adjuncts and *Brahman* devoid of any relation to adjuncts. These are also known as *Saguna Brahman* and *Nirguna Brahman*, respectively. It should be remembered, however, that these two forms of *Brahman*, these two aspects of *Brahman*, are not different. Acharya Shankara speaks of these two forms of *Brahman* and their non-difference in the following way: "*Brahman*, verily, is known to be of two forms: that which is qualified by the adjunct of difference caused by the modifications of name and form, and that which, on the contrary, is devoid of all adjuncts. ... Although *Brahman* is one, it is taught in the *Vedantic* texts as what is to be meditated upon as being related to assumed adjuncts, and as what is to be known as being devoid of any relation to adjuncts."[3]

Dviroopam hi brahma avagamyate, naamaroopa-vikaara-bhedopadhi-vishishtam, tadvipareetam cha sarvopaadhi-vivarjitam...Ekamapi brahma apekshitopaadhi-sambandham cha upaasyatvena jneyatvena cha vedaanteshu upadishyate

द्विरूपम् हि ब्रह्म अवगम्यते, नामरूपविकारभेदोपाधिविशिष्टम्, तद्विपरीतम् च सर्वोपाधिविवर्जितम् ...एकमपि ब्रह्म अपेक्षितोपाधिसम्बन्धम् च उपास्यत्वेन ज्ञेयत्वेन च वेदान्तेषु उपदिश्यते ॥

Shankara calls the *Saguna* aspect of *Brahman* as *Upasya Brahman* for It is capable of being worshipped; on the other hand, *Nirguna Brahman* is *Jneya Brahman* because it cannot be worshipped or attained, but realized as one's own Self.

Reference may also be made to the following passage in the *Brahmasutra Bhasya* of Acharya Shankara, in which he dismisses the difference as being only in name: *Ekohyayamaatma naamamaatra-bhedena bahudhaabhidheeyate iti*
एकोह्ययमात्मा नाममात्रभेदेन बहुधाभिधीयते इति ॥

"The one Self, indeed, is designated differently on account of the difference in mere name."[4]

3. Synthesis of the *Vedanta* and the *Tantra* paradigms in Sri Ramakrishna's Unique Realizations and Teachings — Paradigm Shift from *Satyam-Mithya* of the *Vedanta* to *Nitya-Lila* of the *Tantra*

Sri Ramakrishna looked upon the Ultimate Reality to be both Impersonal and Personal, both Formless and with form, both Transcendent and Immanent. He has used wonderful illustrations in his own inimitable style to bring home the point. One chief burden of his teaching about the nature of the Ultimate Reality is that, one should never put any limitation to the infinitude of God. God is both with form and attributes, He is without any of these, He is beyond both form and formlessness and He could be much more besides. How can anyone say that He is this, and not that? To emphasize that God is both Formless as well as with form, he used the illustration of water and ice. He used to say: "Look, God is with form and again He is formless. Who knows what else He is besides these? Do you know what God with form is like? It is like water and ice. When water freezes, it becomes ice — which inside and outside is water only. Ice is nothing but water. But look, water does not have any particular form, whereas ice does. Similarly, through the cooling influence of the devotees' love, the ocean of

the indivisible *Satchidananda* freezes and takes various forms, as does ice."[5]

And again:

"No one can with finality say that God is only 'this' and nothing else. He is formless, and again He has forms. For the *Bhakta* he assumes forms. But, He is formless for the *Jnani*, that is, for him who looks on the world as a mere dream. ... Think of *Brahman*, Existence-Knowledge-Bliss Absolute as a shoreless ocean. Through the cooling influence, as it were, of the *Bhakta's* love, the water has frozen at places into blocks of ice. In other words, God now and then assumes various forms for his lovers and reveals Himself to them as a Person. But, with the rising of the sun of knowledge, the blocks of ice melt. Then one doesn't feel any more that God is a Person, nor does one see God's forms. What He is cannot be described. Who will describe Him? He who would do so disappears. He cannot find his 'I' any more."[6] Sri Ramakrishna was also fond of comparing a *sadhaka* who dares to describe God to a salt doll that went to measure the depth of the ocean. The doll gets dissolved in and becomes one with the ocean; who then will remain as the individual to come back and give a description of the ocean?

Conditioned as we are by names and forms, our bodies to be counted first among these, our spiritual ascent to the attributeless *Brahman* (*Nirupadhika, Nirguna Brahman*) should perforce be through *Brahman* with attributes and with qualities (*Sopadhika, Saguna Brahman*). The realization of the transcendental Reality, *Nirguna Brahman*, is through the realization of the immanent Reality, *Saguna Brahman*, that interpenetrates the word of names and forms with which we are familiar and in which we live and move and have our being. Swami Vivekananda observed: "The Hindus have discovered that the Absolute can be thought of, and reached, only through the relative."[7] Swami Yatiswaranandaji has called it one of the 'laws of spiritual life': "The realization of the Absolute—the transcendental Reality lies always through the realization of the immanent Divine Principle. The Holy Personality (*Ishta Devata)* is a manifestation of this Divine Principle."[8] This

being so, the Absolute, the attributeless *Brahman* could be conceived and realized as the *Nirguna* aspect of the Divine Mother or *Ishwara*, just as the Divine Mother or *Ishwara* can be considered as the *Saguna* aspect[9] of the Absolute *Brahman*. In other words, what is considered as *Saguna* or *Nirguna*, *Sopadhika* or *Nirupadhika*, endowed with attributes (and qualities) or devoid of them, the Many or the One, is the *same Reality* manifesting in these two aspects. From the point of view of the Absolute, attributeless, transcendent Reality (usually called simply as *Brahman*), *Ishwara* (or Divine Mother Kali or *Shakti* in Sri Ramakrishna's parlance) is the *Saguna* aspect of *Brahman*. By the same logic, *Brahman* could be called the *Nirguna* aspect of *Ishwara* or Divine Mother. When *Brahman* is chosen as the frame of reference from which we look at Reality, *Shakti* is the *Saguna* aspect of *Brahman*. *Brahman* is transcendent and Absolute, while *Shakti* is immanent, interpenetrating the relative world of existence. On the other hand, if *Shakti* frame of reference is chosen, then *Brahman* becomes the *Nirguna* or transcendent aspect of *Shakti*. From the *Brahman* frame, the world of relativity, of names and forms, including *jiva* and ultimately *Ishwara*, are non-existent because in that frame, there is only one transcendental Reality, one unbroken, homogenous mass of Absolute Consciousness (*akhanda-vijnana-ghana-ekarasam)* and there is none else besides — *neha naanaasti kinchana*, with *jiva*, *jagat* and *Ishwara* subsumed in *Brahman*. From the *Brahman* frame, therefore, *Brahman* alone is the Reality (*Brahma satyam*). And, the relative world of names and forms is *mithya*, unreal, for they do not appear to have any existence at all apart from *Brahman*. On attaining this realization of the Absolute from the *Brahman* frame, when one looks at the reality from the *Shakti* or *Ishwara* frame, it is the immanent Reality seen as sporting and playing as the innumerable forms and names, which, in fact, derive their reality and existence from the Absolute. They appear as the *lila* or divine sport of the Transcendental Absolute, *nitya*. Thus, there is a paradigm shift in perception of the same Reality in the

Brahman frame and in the *Shakti* frame. The paradigm of *satyam-mithya* (*Brahma satyam jagat mithya*) in the *Brahman* frame is transformed to the paradigm of *nitya-lila* (*Brahma nityam Shakti lila)* in the Shakti frame. Now, the *Brahman* frame is not a frame at all, there being no question of observation or perception of Reality from that frame, the perceiver or the observer himself having become one with *Brahman*. Any observation or perception or description of the Reality is possible, therefore, from the *Shakti* frame alone. Hence, the *nitya-lila* paradigm is more suitable for the description of the Reality than the *sataym-mithya* frame. The following passage in Swami Saradanandaji's *magnum opus, Sri Sri Ramakrishna Lilaprasanga*, clarifies the above vision from the point of view of Sri Ramakrishna's direct realization (*anubhuti*):

"And when he (Sri Ramakrishna) experienced the *Saguna* Cosmic I, he saw that what is *Brahman* is *Shakti*; what is the *Nirguna* is the *Saguna*; what is the *Purusha* is the *Prakriti*. The same snake is both motionless and moving. What is truly *Nirguna* is *Saguna* in play (*lila)*."[10]

Sri Ramakrishna expounds this *Brahman-Shakti* identity in a remarkable conversation with Pandit Shashadhar:

"He who is *Purusha* is verily *Prakriti*; He who is *Brahman* is verily *Shakti*. When actionless, when not engaged in creation, preservation and dissolution, He is called *Brahman*, *Purusha*; again, when He is engaged in all these actions, He is called *Shakti*, *Prakriti*. But, He who is *Brahman* is verily *Shakti*, He who is *Purusha* is verily *Prakriti*. Water is water, whether it is static or in motion. A snake continues to be a snake whether it is moving in a zig-zag fashion or whether it remains quietly coiled up."[11]

It is interesting to see Acharya Shankara, the great *Advaitic* exponent, speaking of *Brahman* and *Shakti* as identical. Commenting on the Lord's statement in the *Gita* verse beginning with *Brahmanohi pratishthaaham...*, Shankara writes:

"That divine Power (*Shakti*) of *Ishwara* manifested by *Brahman* for the purpose of bestowing grace and blessing devotees, etc., is verily Me, the [Supreme] *Brahman*, for *Shakti* and *Shaktiman* (the possessor of Power) are non-different."[12]

4. *Bhavamukha*—Sri Ramakrishna's Unique State of Realization

Bhavamukha is a unique contribution of Sri Ramakrishna to Indian spiritual tradition, his original and glorious contribution to the science of Consciousness developed in India through ages upon ages of spiritual endeavour by countless spiritual scientists, the *rishis*. *Bhavamukha* concept arose from a certain spiritual experience of Sri Ramakrishna, perhaps unparalleled in history, which he had a couple of times during his period of *sadhana*, culminating in his getting a repeat of it as an innermost experience almost at the end of his superhuman *sadhana*. Interestingly, this unique spiritual experience was the direct outcome of the mental disturbance that the childlike Ramakrishna, innocence incarnate that he was, felt at the words of his cousin, Haladhari. Haladhari was proud of his scholarship, arrogant and snobbish. He quoted the scriptures to say that Sri Ramakrishna's visions of gods and goddesses were nothing but a fancy, resulting from a frenzied brain. Sri Ramakrishna was visibly perturbed. Like a child, he ran to his Divine Mother Bhavatarini Kali, as was his wont whenever he was faced with any problem, and piteously importuned Her to tell him if Haladhari was right. Sri Ramakrishna himself narrated this incident to the devotees in later days as follows:

"I thought that the divine visions I had had during ecstasy and the commands I had received were all false. The Mother must have cheated me! I was extremely upset. Piqued, I cried to the Mother: 'Mother, I am unlettered and ignorant. Why have You cheated me in this way?' I couldn't control myself and kept crying. I was in a room of the *kuthi* [bungalow]. After a while a smoke-like mist arose from the floor and covered some space before me. Then I saw within a golden-complexioned, living, calm face with a long flowing beard. That figure looked at me intently and said in a deep voice: 'My child, you remain in *bhavamukha*. You remain in *bhavamukha*. You remain in *bhavamukha*!' After repeating this three times, the form slowly dissolved into the mist, then that mist also disappeared. This vision reassured me."[13]

Much later, Sri Ramakrishna himself related this incident to his disciple, Swami Premananda. On another occasion, he once again felt terribly disturbed remembering these words of Haladhari. "Sitting on the seat of worship", he said, "I cried piteously and importunately pressed the Divine Mother for a solution. Mother then appeared near the worship-jar in the form of a woman called 'Rati's mother' and said: 'Do remain in *bhavamukha*'." On a third occasion, when the peripatetic teacher Tota Puri left Dakshineswar after imparting to him the *Vedantic* knowledge and he remained in the *nirvikalpa* plane of consciousness, merged in the Absolute for nearly six months at a stretch, he heard, at the end of this period, the incorporeal voice of the Divine Mother speaking in his heart of hearts: 'Remain in *bhavamukha*.'

5. The Content of the *Bhavamukha* State of Consciousness and Its Philosophical Understanding from the *Tantra* and *Vedanta* Paradigms

5.1. Paradigm Shift from *Satyam-Mithya* to *Nitya-Lila*

The mystical overtones of Sri Ramakrishna's above experiences apart, the content of the *bhavamukha* state of consciousness is that, it is the meeting place of and the junction between the Absolute and the relative, of Being and becoming, *Nirguna* and *Saguna*, Transcendent and immanent, the Infinite and the finite. It is the borderland, like the zone of zero 'g', in the language of physics, of gravitation. Stationed in such a zone, the *Avatara* or Divine Incarnation transacts with this finite world, this relative universe, with his being all the while fully immersed in the Infinite, in the Absolute. Remaining in *bhavamukha*, he becomes as it were, the five-faced (*panchamukhi)* Shiva, the upward-looking face (*oordhva-vaktra)* drawing light and power from the Transcendental, from the Absolute, from the Infinite, from the realm of Being, and communicating them on all sides (represented by the four faces, *uttara-vaktra, dakshina-vaktra, poorva-vaktra* and *paschima-vaktra)* to the immanent, to the relative, to the finite, to the world of becoming.

The *bhavamukha* state of consciousness could be philosophically understood in the light of the *Tantra* and *Vedanta* paradigms — Tantra paradigm of *shad-chakras* (six centres of consciousness) and *Vedanta* paradigm of *pancha-koshas* (five sheaths) and *avastha-traya* (three states of consciousness). It is remarkable to note that Sri Ramakrishna is at home with both the *Tantra* and the Vedanta paradigms as his conversations recorded in *The Gospel* would show. Before we enter into this realm of philosophical discussion, we would draw attention to another unique concept introduced by Sri Ramakrishna into Indian spiritual tradition—the concept of *vijnana*. An *ajnani* (ignorant person) is one who takes this unreal world of relativity to be real; a realized soul, one who is endowed with knowledge (*jnani*) sees this relative world to be unreal, like a dream; a fully realized soul (*purna jnani*) is a person who has completely got merged in the Ultimate Reality or *Brahman*, so much so that there is no question of his seeing the relative world at all, just as in the case of one in deep sleep. To this series, Sri Ramakrishna adds one more, called *vijnani*. A *vijnani* is a person who, having realized *purna jnana* (complete knowledge) in the form of complete merger into *Brahman*, emerges therefrom, mysteriously as it were by the Divine Will, for the good of the world, to liberate others in bondage, out of great, unconditioned compassion and love for all beings. For a *vijnani*, the world of relativity that he perceived as a dream, a mirage (*mithya*) in his state as a *jnani*, stands transformed into a luminous world of bliss. He remains immersed in the supreme Joy (*ananda*) of *Brahman* and sees everything saturated by that *ananda*. For the *vijnani*, therefore, the world is no longer *mithya*, but *lila*. His vision of the *Para-Brahman* — Transcendent, Absolute, Impersonal, Infinite—remains intact (*nitya*). In and through that vision there now arises a vision of the *Para-Brahman*—Immanent and Personal, the Indwelling Consciousness (*antaryamin*) interpenetrating and saturating (*otaprota*) everything through and through (*lila*). Thus, the *satyam-mithya* paradigm in *Brahma satyam jagat mithya* gets transformed into the *nitya-lila*

paradigm as *Brahma nityam jagat lila*. The latter paradigm is a kind of *Vedantic Tantra* paradigm, rather than a conventional *Tantra* paradigm. *Advaita* is not compromised. *Dvaita*, at the same time, is not rejected. Both are perceived as being subsumed into a Totality where Reality is perceived as the One as well as the Many — not the 'many' seen in the unawakened state of an *ajnani*, but the Many that is seen in the eyes of a *vijnani*, a transformed world of the Many as participating in a Divine *lila* that the One is playing in His inexplicable divine sport. How he emerges from the state of supreme merger in the Absolute to the relative universe — now transformed into a world of supreme Bliss or *ananda* — is a profound mystery of *avatara tattwa* that defies any logical explanation; but then it is not illogical, being beyond all logic. One could call it 'alogical' in the sense that it is not anti-logical, nor is it confined to the realms of logic. That is, it is supra-logical. Further, it is mystical in the sense that the deep mystery of the *avarata* is a matter for spiritual insight and realization by the mystic *sadhaka* rather than a matter of debate and study by an intellectual theologian. Sri Ramakrishna's philosophy of the *vijnani*, abiding in *bhavamukha*, is thus supra-logical and mystical — perhaps it could be called 'alogical mysticism'.[14] A *vijnani* is a 'special *jnani*' (*vishesha jnani*) combining in himself the *jnana* of the Seer of the Absolute, Impersonal, Transcendent Reality and the *bhakti* of the sage enjoying the Bliss of the Personal, Immanent God. *Jnana* and *bhakti* meet in a *vijnani* and fuse into one — *vijnana*. *Bhavamukha*, then, is the state of *vijnana*. As the hymn on Sri Ramakrishna beginning with *vishuddha vijnanam...* says: "*Jnanasya bhaktescha vishuddha murtim, dvimurtirekam bhuvi Ramakrishna*" — "Ramakrishna embodied on earth [as the Divine Incarnation] is the purest Embodiment of both *jnana* and *bhakti* fused into one." Swami Vivekananda's declaration of this unique and new contribution of Sri Ramakrishna to the Indian spiritual tradition may be recalled in this context:

"What Ramakrishna Paramahamsa and I have added to this is that the Many and the One are the same Reality, perceived by the same mind at different times and in different attitudes."[15]

This remarkable statement is the basis of Swamiji's scheme of *karma-yoga*: *Karma* not opposed to *jnana*, but as expressing *jnana* and *bhakti*. Sister Nivedita's profound interpretation of her master, Swami Vivekananda's message, in the following memorable words may be recalled:

"It must never be forgotten that it was the Swami Vivekananda who, while proclaiming the sovereignty of the *Advaita* Philosophy, as including that experience in which all is one, without a second, also added to Hinduism the doctrine that *Dvaita*, *Vishishtadvaita*, and *Advaita* are but three phases or stages in a single development, of which the last-named constitutes the goal. This is part and parcel of the still greater and more simple doctrine that the many and the One are the same Reality, perceived by the mind at different times and in different attitudes; or as Sri Ramakrishna expressed the same thing, 'God is both with form and without form. And He is that which includes both form and formlessness.'

"It is this which adds its crowning significance to our Master's life, for here he becomes the meeting-point, not only of East and West, but also of past and future. If the many and the One be indeed the same Reality, then it is not all modes of worship alone, but equally all modes of work, all modes of struggle, all modes of creation, which are paths of realisation. No distinction, henceforth, between sacred and secular. To labour is to pray. To conquer is to renounce. Life is itself religion. To have and to hold is as stern a trust as to quit and to avoid.

"This is the realisation which makes Vivekananda the great preacher of Karma, not as divorced from, but as expressing Jnana and Bhakti. To him, the workshop, the study, the farmyard, and the field are as true and fit scenes for the meeting of God with man as the cell of the monk or the door of the temple. To him, there is no difference between service of man and worship of God, between manliness and faith, between true righteousness and spirituality. All his words, from one point of view, read as a commentary upon this central conviction. 'Art, science, and religion', he said once, 'are but three different ways of expressing

a single truth. But in order to understand this we must have the theory of *Advaita*.' "

6. The *Panchakosha-Avasthatraya* Paradigm of *Vedanta*

The effulgent being of golden complexion with a long flowing beard that Sri Ramakrishna saw in his vision and who instructed him to remain in *bhavamukha*, is *Hiranyagarbha,* whose description exactly matches the one given in the *Chhandogya Upanishad*.[16] *Hiranyagarbha* is the Cosmic Mind, the Universal Intelligence; in the technical language of *Vedanta* it is called *samashti-buddhi-upahita-chaitanya.* In Him are subsumed all the individual minds, the particular intelligences. He is the *Mahan Atman*, the great Self, known also as *Mahat*.[17] He is the first offspring of *Avyakta*, the Unmanifest, and is, therefore, the first door to the world of becoming, the world of relative existence. *Avyakta* or *Avyakriti* is *Ishwara*, *Saguna Brahman*, whose first-born is *Hiranyagarbha* or *Mahat*. Beyond *Avyakta* is the Absolute, the Pure Being, called *Purusha*.[18] *Hiranyagarbha* or *Mahat* is the first tangible manifestation of the Absolute in the relative universe. *Avyakta*, also called *Prakriti*, *Maya*, *Ishwara*, is *Brahman* or the Absolute associated with the undifferentiated cosmic *ajnana* (*samashti-ajnana-upahita-chaitanya*). The Absolute Itself is beyond causal relations. The Unmanifest is the ultimate cause of all the causes and effects perceived in the material universe. Names and forms lie in it in a potential manner. Thus, the Unmanifest may be compared to a seed ready to burst into a sprout. Hence, it is called the seed of creation. *Purusha* is the Spirit that fills everything or that dwells in the body, considered as a *puri* or city. It is the Absolute, *Brahman*, the Supreme Goal, which is Pure Consciousness devoid of all attributes (*nirupadhika, nirvishesha, nirguna Brahman*).[19] The state of *bhavamukha* is the state of *Ishwara*. The ego of the *avatara purusha* who dwells in the state of *bhavamukha* after the realization of the Absolute *Brahman*, choosing to 'come down' as it were for the spiritual welfare of the world, is what Sri Ramakrishna calls the 'ripe ego' transformed and transfigured as the Cosmic I, the Immense I (*virat*

ami). Sri Ramakrishna used to say that only *avatara purushas*, specially commissioned by the Divine for the redemption of all beings (hence called *adhikarika purushas*), can 'come down' from the state of Absolute, non-dual *Brahman* consciousness for the good of the world. Ordinary *jivakotis* may somehow attain to the highest by dint of severe personal effort, *sadhana*, but once having attained to the Absolute, non-dual *Brahman* consciousness, they cannot any more 'come down' from that plane, but pass away in *samadhi*. Swami Saradanandaji, in his *magnum opus, Sri Sri Ramakrishna Lilaprasanga*, has defined *bhavamukha* as follows:

"The Cosmic I-ness that exists between the *Nirguna* and *Saguna* aspects of *Brahman* is called *bhavamukha*. ... This Cosmic I is the 'I' of God or the Divine Mother. ... When the Master's I-consciousness was completely dissolved, he dwelt on the *Nirguna* aspect of the Divine Mother that is beyond the limit of the Cosmic I. At that time he had no experience of the Cosmic I and Its innumerable waves of ideas, which we call the world. And when the Master's I-consciousness became slightly manifest, he saw the *Saguna* Cosmic I and Its waves of ideas to be connected with the Divine Mother's *Nirguna* aspect. Put another way, as soon as the Master ascended to the *Nirguna* state, his experience of the difference-in-itself (*svagata-bheda*) dissolved in the One without a second. And when he experienced the *Saguna* Cosmic I, he saw that what is *Brahman* is *Shakti*; what is the *Nirguna* is *Saguna*; what is the *Purusha* is the *Prakriti*. The same snake is both motionless and moving. What is truly *Nirguna* is *Saguna* in play (*lila*). After he had experienced the full vision of Divine Mother, with Her *Nirguna* and *Saguna* aspects, he received the command: 'Remain in *bhavamukha*'. That is, 'Do not dwell in the *Nirguna* state with I-consciousness dissolved completely. You are that Cosmic I from which all the ideas of the world continually evolve. Now that you can maintain direct awareness that God's will is your will and His action is your action, you must live in this world, doing good to humanity'."[20]

Thus, Sri Ramakrishna dwelt in the state of *bhavamukha*, with his own sense of 'I' completely merged in the Cosmic 'I' of *Ishwara*, and operated from the *nirguna-saguna*, Impersonal-Personal, Absolute-Relative, Transcendent-Immanent junction.

Let us now try to understand this state from the *panchakosha* paradigm of Vedanta. Before we begin, it may be good to recapitulate some fundamental *Vedantic* ideas relating to *panchakosha* (five sheaths), *sharira-traya* (three bodies) and *avashtha-traya* (three states of consciousness). *Panchakosha* or 'five sheaths' was a term introduced by Acharya Shankara in his commentary on the *Taittiriya Upanishad*, whereas the original *Upanishadic* text uses the term *ātman* in place of Shankara's term '*kosha*'. Human personality is described as comprising five *ātmans* or 'sheaths' — *annamaya*, *pranamaya*, *manomaya*, *vijnanamaya* and *anandamaya*. The *Taittiriya* text speaks of *annamaya-atman*, *pranamaya-atman*, *manomaya-atman*, *vijnanamaya-atman* and *anandamaya-atman*, while Shankara interprets these as *annamaya-kosha*, *pranamaya-kosha*, *manomaya-kosha*, *vijnanamaya-kosha* and *anandamaya-kosha*, respectively. Now, post-Shankara *Vedanta* texts group these five *koshas* into three *shariras* or bodies as follows: *annamaya* is the physical body (*sthula sharira*); *pranamaya-manomaya-vijnanamaya* complex is the subtle body (*sukshma sharira*); and *anandamaya* is the causal body (*karana sharira*). Again, these three bodies are identified with the three states of the Self, namely, waking state (*jagrat avastha*), dream state (*svapna avastha*) and deep sleep state (*sushupti avastha*)—*sthula sharira* with *jagrat*, *sukshma sharira* with *svapna* and *karana sharira* with *sushupti*. The self is given three separate names when associated with these three states: *visva* or *vaisvanara* when associated with *jagrat*; *taijasa* when associated with *svapna*; and *praajna* when associated with *sushupti*. Further, each of the three modes of the self has a microcosmic dimension (*vyashti*) and a macrocosmic dimension (*samashti*). The macrocosmic counterpart of *vaisvanara* is *virat*; of *taijasa* is *Hiranyagarbha*; and of *praajna* is *Avyakta* or *Ishwara*. The

ultimate purpose of *Vedanta* is to show the unreality of the relative universe of duality and establish the identity of *atman* and *Brahman* through the establishment of the identity[21] of *Vaisvanara-Virat*, *Taijasa-Hiranyagarbha* and *Praajna-Ishwara*.[22] In fact, *visva*, *taijasa* and *praajna* are the three modes of one and the same Self called *turiya chaitanya* or simply *atman* associated with limiting adjuncts (*upadhis*). The macrocosmic counterpart of *Turiya* is *Brahman*. The identity of *atman* and *Brahman* is the essence of the Great Sayings or *mahavakyas* that form the bedrock of *Advaita Vedanta*. There are four famous *mahavakyas* belonging to the four *Vedas*: (1) *Tattwamasi*, (2) *Aham Brahmasmi*, (3) *Prajnanam Brahma*, and (4) *Ayam Atma Brahma*.

The *Vedantic* ideas given above are displayed in the form of the following chart:

Panchakoshas or *Pancha-atmans*	*Sharira-traya* (three *shariras*)	*Avastha-traya* (three states)	Modes of self: *Vyashti* (Microcosm)	Modes of self: *Samashti* (Macrocosm)
Anandamaya	Causal body (*karana sharira*)	Deep sleep (*sushupti*)	*praajna*	*Ishwara*
Vijnanamaya Manomaya, Pranamaya,	Subtle body (*sukshma sharira*)	Dream (*svapna*)	*taijasa*	*Hiranyagarbha*
Annamaya	Gross body (*sthula sharira*)	Waking (*jagrat*)	*vaisvanara* or *visva*	*Virat*

Beyond the causal or *karana* is the Great Cause or *mahakaarana* which is the *turiya chaitanya*. *Turiya* is the Absolute, Transcendental, Infinite. *Hiranyagarbha* is the First-born or *prathamaja*. It is at the stage of *Hiranyagarbha* that the relative world of names and forms appears. Beyond *Ishwara* or *Saguna Brahman* is the Absolute or *Nirguna Brahman*. Below Him (*Ishwara*) is the relative, finite world beginning from '*Hiranyagarbha* down to a blade of grass' as the famous *Vedantic* parlance would state it (*Aabrahma-stamba-paryantam*). The state of *Ishwara* is, therefore, the state in between the Absolute

and the relative, Transcendental and immanent, Infinite and finite, One and the many. This state, the state of *Ishwara*, *in which there exists full awareness of the Nirguna or Absolute state and of the Hiranyagarbha state when relativity in the form of space-time-causation just begins to sprout,* is then the state of *bhavamukha*. Stationed in the state of *bhavamukha*, the *avarata* has access to both the Infinite and the finite, the Absolute and the relative, *nirguna* and *saguna*.

Sri Ramakrishna's description of Sri Chaitanya's spiritual states of consciousness in the light of the *panchakosha* framework of *Vedanta* is quite illuminating. We quote this passage below.[23]

"Chaitanya experienced three states of mind. First, the state of outer consciousness (*bahya*) state, when his mind dwelt on the gross and the subtle. Second, the state of semi-outer consciousness (*ardha-bahya*) state, when his mind entered the causal body and was absorbed in the bliss of divine intoxication. Third, the state of innermost consciousness (*antar-dasha*), when his mind was merged in the Great Cause. This agrees very well with the five *koshas*, or 'sheaths', described in the Vedanta. The gross body corresponds to the *annamayakosha* and the *pranamayakosha*, the subtle body to the *manomayakosha* and the *vijnanamayakosha*, and the causal body to the *anandamayakosha*. The *mahakarana*, the Great Cause, is beyond the five sheaths. When Chaitanya's mind merged in That, he would go into *samadhi*. This is called the *nirvikalpa* or *jada samadhi*. While in the state of outer consciousness (*bahya*), Chaitanya sang the name of God; while in the state of semi-outer consciousness (*ardha-bahya*), he danced with the devotees; and while in the innermost state of consciousness, he remained absorbed in *samadhi*." It may be noted that except for a slight regrouping of the five *koshas* as corresponding to the three bodies, the description agrees with the above chart beautifully.

7. The *Shad-Chakra* Paradigm of *Tantra*

Tantra speaks of six centres of consciousness (*shad-chakras*), situated along the *sushumna* canal inside the spinal column, through

which a person's psychic and spiritual energy, called *kundalini*, moves from centre to centre. We may do well to quote the relevant passages from Swami Saradanandaji's *magnum opus, Sri Sri Ramakrishna Lilaprasanga*:

"The *yogis* and sages of the East, especially of India, say that good and bad thoughts do not merely leave their marks on the brain: they become transformed into an impelling subtle force that engages you in good and bad actions in the future. This force remains eternally at the base of the tailbone, the basic centre of *kundalini*, which is called *muladhara*. This is the dwelling place of the motivating powers that accumulate birth after birth, which are called *samskaras*, or past impressions. *Samskaras* can be destroyed only through the realization of God or the attainment of *nirvikalpa samadhi*."[24]

"Any mental modifications or moods that have arisen and are emerging in an individual, in this life and in past lives, remain in a subtle form and manifest in a great vigorous motivating power that is called '*kundalini*' according to Patanjali and other sages. ... The *yogis* say that the *Paramatman* [indivisible Existence-Knowledge-Bliss Absolute], or God, dwells as consciousness in the *Brahmarandhra*, the aperture in the crown of the head. The *kundalini* power that is in the base of the spine has tremendous affinity for the Supreme Self; in other words, God attracts it constantly. When the *kundalini* is sleeping, it does not feel that attraction. But as soon as it is awake, it is drawn to God and moves towards Him. The path that the *kundalini* takes to reach God exists within each one of us. Starting from the brain, this path extends through the spine down to *muladhara*, the lowest centre, located at the base of the spine. According to the *Yoga* scriptures, this path is called the *sushumna* channel. Western physiologists have described it as the canal centralis, but so far they have not discovered its purpose. It is by this path that the *kundalini*, once separated from the Supreme Self, has descended from the brain to the *muladhara*. The *kundalini* ultimately goes back upward

to the brain through the same path by passing through six centres that exist one above the other [in the *sushumna* channel] inside the spine....When the *kundalini* reaches the brain, the aspirant attains the ultimate experience of spirituality, which is the non-dual knowledge that unites the aspirant with the Supreme Self, the Cause of causes. At that time the aspirant also reaches the culmination of the devotional mood that he or she has been following — the ultimate source of all ideas that arise in human minds — and remains absorbed in the realm beyond all ideas."[25]

"The *yoga* scriptures name the six centres of *kundalini* (*shad-chakras*) and describe their respective locations:

1. *muladhara*, between the base of the sexual organ and the anus;
2. *svadhishthana*, at the base of the sexual organ;
3. *manipura*, at the navel;
4. *anahata*, at the heart;
5. *vishuddha*, at the lower end of the throat;
6. *ajna*, between the eyebrows.

Of course, it is to be understood that each of these centres are situated in the *sushumna* channel within the spine, and the words *heart*, *throat*, and so on indicate the corresponding regions in the body."[26]

Sri Ramakrishna has described the spiritual experiences that one attains when the *kundalini* rises through the *sushumna* channel, from a lower centre to a higher, one by one. We quote once again Sri Ramakrishna's words as recorded in the *Lilaprasanga*:

"*Vedanta* speaks of seven planes, in each of which the aspirant has a particular kind of vision. The human mind has a natural tendency to confine its activities to the three lower centres—the regions of the anus, the genitals, and the navel—and therefore is content with the satisfaction of eating, dressing, sense pleasure and so forth. If the mind transcends those three centres and reaches the fourth, the one near the heart, the aspirant sees a divine light. The mind may sometimes reach the heart centre but then descend to the three lower centres. However, when the mind comes to the

fifth centre, near the throat, the aspirant cannot speak of mundane things: he or she talks about God only. ... Even from this throat centre a person may slip down to the three lower centres; so one should remain vigilant.

But if one's mind reaches the sixth centre, between the eyebrows, there is no more fear of falling. The aspirant then attains the vision of the *Paramatman*, the Supreme Self, and remains always in *samadhi*. There is only a thin veil, as transparent as glass, between this centre and the sahasrara, the thousand-petalled lotus at the crown of the head. The Supreme Self is then so close that one can imagine oneself merged in It. But that is not the case. From this state the mind can come down to the fifth, or at the most to the fourth centre, but not below that. However, ordinary aspirants, classed as jivas, cannot return from this state. After remaining constantly in *samadhi* for twenty-one days, they break that thin veil and become one with *Brahman* forever. This eternal union of the *jiva* and *Brahman* in the *sahasrara* is known as reaching the seventh plane."[27]

Now, the sixth *chakra*, *aajna*, corresponds to the level of *Saguna Brahman* or *Ishwara*. Stationed at the sixth centre of consciousness, which corresponds to the *ananadamaya kosha* of *Vedanta*, the *avatara* has instant access to both the Absolute (corresponding to *sahasrara* or the seventh plane) and the relative (corresponding to *anahata*). It is by piercing through and passing beyond this *aajnachakra* that one attains the *Nirguna Brahman* realization at the *sahasrara*. *Avataras* and *ishwrarakotis* 'come down' as it were from the *sahasrara* plane of Consciousness to that of *aajnachakra* to remain in the state of *bhavamukha*. Thus, the state of *bhavamukha* corresponds to the sixth centre, the *aajna chakra*, reached by these extraordinary World Movers, the *avataras*, after travelling in a loop as it were from *anahata* through *aajna* to *sahasrara* and 'descending' to *aajna* once again to stay put there in *bhavamukha*. This state thus appears to be 'below' the *saharara* Absolute Consciousness, but is, in fact,

'beyond' it, for the *avataras* reach it on going 'beyond' the Absolute state attained in *sahasrara*. Dualists and qualified non-dualists (Ramanuja, for example) taking *anandamaya* itself to be *Brahman* corresponds to reaching the *aajna* for the first time and not proceeding beyond it. But, the *bhavamuka* experience attained by Sri Ramakrishna and in which he was abiding at the Divine Mother's command corresponds to going 'beyond' the *aajna* (*ananadamaya*) to merge in the Absolute (*sahasrara*), then 'looping back to descend' as it were to *aajna* once again to stay put there permanently in *bhavamukha*, having equal access to both *sahasrara* (Absolute) on the one hand, and the *anahata* (Relative, starting from *Hiranyagarbha* downwards in the relative existence) on the other. This state, therefore, in a sense goes beyond the traditionally accepted *Vedantic* 'highest' state of Absolute (corresponding to *sahasrara*). It is in this sense that Sri Ramakrishna once said that his experiences have gone beyond the *Vedas* and *Vedanta*. That the state of *Nirguna Brahman* realization is attained by piercing through and passing beyond this *aajna chakra* tallies beautifully with Sri Ramakrishna's own experience while practising the *Advaita sadhana* under Tota Puri. When Sri Ramakrishna found it impossible to penetrate beyond the *aajna chakra* where he had the vision of the living and luminous form of his most beloved Divine Mother Kali (*Saguna Brahman*), Tota Puri became impatient and piercing the centre between the eyebrows with a sharp piece of glass, directed Sri Ramakrishna to concentrate on that centre (*aajna*). Sri Ramakrishna, following Tota Puri's instructions, brought his mind to a sharp focus at the *aajna chakra* and when he again got absorbed in the living and luminous form of his Divine Mother Kali beyond which he could not proceed, he imagined *jnana* to be a sword and cut the Mother's form asunder into two. The mind had no more support (*avalambana*) and dived straight into the non-dual, *advaita* Consciousness, by merging into the seventh plane at *sahasrara*. Having lived in that state of non-duality at *sahasrara* for a long

period of six months, Sri Ramakrishna received a divine command to 'remain in *bhavamukha*' — that is, to 'come down' as it were from the *sahasrara* plane (of the Absolute) and dwell at *aajna chakra* centre of consciousness that is the threshold between *sahasrara* (in which the Absolute, *nirguna*, Transcendent, Infinite is experienced) and the *anahata chakra* (wherein the relative, *saguna*, immanent, finite aspect of reality is experienced).

The following chart gives a synthetic picture of the *shad-chakras* and the *pancha-koshas*:

Chakras	**Corresponding *koshas***	**Macrocosmic reality**
Aajna	*Anandamaya*	*Ishwara* or *Saguna Brahman*
Vishuddha, Anahata	*Vijnanamaya*	*Hiranyagarbha* or *Mahat*
Manipura, Svadhishthana, Muladhara	*Manomaya, Pranamaya, Annamaya*	*Virat*

The following mantras of *Kathopanishad* expound the *Vedanta* picture given above, both from the point of view of theory as well as practice (*sadhana*):[28]

Indriyebhyah paraahyarthaa arthebhyascha param manah |
Manasastu paraa buddhirbuddheraatmaa mahaan parah ||
Mahatah paramavyaktam avyaktaat purushah parah |
Purushaanna param kinchit saa kaashthaa saa paraa gatih.||

इन्द्रियेभ्यः परा ह्यर्था अर्थेभ्यश्च परं मनः ।
मनसस्तु परा बुद्धिर्बुद्धेरात्मा महान् परः ॥
महतः परमव्यक्तम् अव्यक्तात् पुरुषः परः ।
पुरुषान्न परम् किञ्चित् सा काष्ठा सा परा गतिः ॥

"Beyond the senses are the objects; beyond the objects is the mind; beyond the mind, the intellect; beyond the intellect, the Great *atman* (*Hiranyagarbha* or *Mahat*); beyond the *Mahat*, the Unmanifest (*Avyakta* or *Ishwara*); beyond the Unmanifest, the *Purusha* (Absolute or *Nirguna Brahaman*). Beyond *Purusha* there is nothing else; this is the end, the Supreme Goal."

Yacchet vaangmanasee praajnah tadyachhet jnaana aatmani
Jnaanamaatmani mahati niyachhet tadyachhechhanta aatmani
यच्छेत् वाङ्मनसी प्राज्ञः तद्यच्छेत् ज्ञान आत्मनि ।
ज्ञानमात्मनि महति नियच्छेत् तद्यच्छेच्छान्त आत्मनि ॥

"The wise man should merge his speech in his mind, and his mind in his intelligence (*vijnanamaya-atman*). He should merge his intellect in the Cosmic Mind (*Mahat* or *Hiranyagarbha*), and the Cosmic Mind in the Tranquil Self (Absolute, *Nirguna Brahman*)."

8. Some Insights Gained from a Study of Modern Physics, Especially Quantum and Theoretical Particle Physics

In the field of high energy particle physics, it is customary to distinguish between two types of transformations: global and local. A local transformation is one which is space-time-dependent; a global transformation, on the other hand, is space-time-independent. A new spiritual world-view could open up if this principle from the field of high energy particle physics is applied to the field of spirituality.

Spiritual experience, spiritual awakening and spiritual insight are usually defined as a transformation of consciousness.[29] For that matter, is it not that any experience, be it the higher transcendental — called 'spiritual' in Indian mystical tradition — or the ordinary experience of the everyday world, has to do with some kind of transformation of consciousness, our perceptions, feelings, emotions, thoughts and the whole content of awareness? In the light of the above definition about local and global transformations, may we suggest that while the higher spiritual experiences that are space-time-independent are 'global transformation of consciousness', the ordinary experiences of everyday life that are space-time-dependent are 'local transformation'. The important difference between *life* and *consciousness* needs to be remembered in this context. Whereas, the everyday experiences involve *prana* (translated as 'life') directly rather than consciousness (*chaitanya*) *per se*, the higher spiritual experiences are purely a play of Consciousness. This

distinction between life and consciousness is something unique to Indian philosophy and spiritual world-view. Whereas life is the play of *pranamaya kosha*, *chaitanya* (higher consciousness) awakens with the awakening of *vijnanamaya kosha*. *Vedanta* would assert that as long we are at the level of *annamaya*, *pranamaya* and *manomaya*, we are still in the 'unawakened' state; it is only with the awakening of *vijnanamaya kosha* (which from the *sadhana* point of view is called the awakening of *dhi*, *medha*, or *prajna*, the faculty of higher intuition) that we become awakened or 'conscious' in the real sense of the term. The play of *annamaya*, *pranamaya* and *manomaya* takes place in animals too; but it is only in human beings that *vijnanamaya* and *anandamaya* get opened up. *Bhavamukha* is, in a sense, the junction between matter, life, mind (*annamaya*, *pranamaya*, *manomaya*), on the one side, and Consciousness (*vijnanamaya*, *anandamaya*), on the other side. If we invoke Western psychological concepts of the unconscious and the conscious, we could then say that *annamaya*, *pranamaya* are, according to them, the unconscious and *manomaya* is, in their parlance, conscious. They do not go farther than that. But, the Indian spiritual psychology would consider all the three — *annamaya*, *pranamaya*, *manomaya*—to be unconscious, *vijnanamaya* to be the first awakening of consciousness, *anandamaya* and beyond to be the superconscious. Various types of *samadhi* spoken of in our *yoga* scriptures begin at the *vijnanamaya* level; at the *anandamaya* level, *savikalpa samadhi* is experienced, direct vision of *Ishwara* or God is attained; beyond *anandamaya*, one experiences *nirvikalpa samadhi*, from which only *avataras* and *adhikarika purushas* (*ishwarakotis*), specially commissioned by Divine Will (as we perceive it from the relative plane) to liberate beings in bondage and do good to the world as a part of their spiritual mission, can 'come back'; on 'coming back', they permanently abide in the *ananadamaya* level (*Ishwara* consciousness), having instant access to the superconscious realm beyond *anandamaya*, as well as the

conscious and unconscious realms below (*vijnanamaya*, *manomaya*, *pranamaya*, *annamaya*). But, their minds never come down below the level of *anandamaya*. The state of consciousness in which the *avataras* and *ishwarakotis* dwell and abide while carrying on their spiritual ministration at the *anandamaya* level is the state of *bhavamukha*. In the particle physics terminology introduced at the beginning of the present section, *bhavamukha* may be regarded as the junction between and a synthesis of the global and the local transformations of consciousness. Remaining in *bhavamukha*, these exceptional souls, the Saviours, the Redeemers of humankind, clearly 'see' the unity of all consciousness—the global and the local transformations—the whole gamut of the superconscious, conscious and the unconscious.

9. Microcosm-Macrocosm Identity

As we had mentioned earlier (section 6), consciousness at each level has a microcosmic (*vyashti*) and macrocosmic (*samashti*) dimension. *Virat*, *Hiranyagarbha* and *Ishwara* are the *samashti* aspects, while the corresponding *vyashti* aspects are *visva* (or *vaisvanara*), *taijasa* and *praajna*, respectively. The realization of the identity of the microcosm and the macrocosm in the depths of consciousness at each level, leading to the ultimate realization of *atman-Brahman* identity as expounded in the *mahavakyas*, is the supreme goal of *Vedanta*. Swami Vivekananda had a unique spiritual experience while meditating under a peepul tree near Almora, in which he realized the oneness[30] of the microcosm and the macrocosm. He later told his companion, Swami Akhandananda, that through this experience one of the greatest problems of his life was solved. Swamiji made some notes of the contents of his experience, and the fragments that he wrote in Bengali in his notebook read as follows:

"In the beginning was the Word, etc.

"The microcosm and the macrocosm are built on the same plan. Just as the individual soul is encased in a living body, so is the universal Soul in the living *Prakriti* — the objective universe.

Shivaa [that is, Kali] is embracing Shiva: this is not a fancy. The covering of the one [Soul] by the other [Nature] is analogous to the relation between an idea and the word expressing it; they are one and the same; and it is only by a mental abstraction that one can distinguish between them. Thought is impossible without words. Therefore, in the beginning was the Word, etc.

"This dual aspect of the Universal Soul is eternal. So, what we perceive or feel is this combination of the Eternally Formed and the Eternally Formless."[31]

10. Sri Ramakrishna as the Embodiment of Harmony and Synthesis

Abiding in the state of *bhavamukha*, 'this combination of the Eternally Formed and the Eternally Formless', the *avataras* and their chiefmost apostles (*ishwarakotis*), although perceiving this world as non-different from *Brahman*, continue to engage in its redemption through compassion. Reality is perceived as one Totality, Wholeness in which the One and many appear to be two aspects of the same Reality. In such a world-view, in the *bhavamukha weltanschuuang*, there comes a wonderful vision of a universal synthesis. All the *avataras*, great prophets, world movers, were embodiments of great synthesis and harmony. In their synthetic vision, no contradictions exist. We may say that in that Integral Vision, all contradictions meet and lose their 'contradictoriness'.[32] Absolute and relative, Infinite and finite, Macrocosm and microcosm, get subsumed in an indescribable Wholeness. Sri Ramakrishna's life is a glorious illustration of this synthesis. Swami Vivekananda inherited this unique power of synthesis from his Master. In Romain Rolland's memorable words,

"In the two words, equilibrium and synthesis, Vivekananda's constructive genius may be summed up. ... He was the personification of the harmony of all human energy."[33]

Swami Vivekananda saw in his Master, Sri Ramakrishna, a unique combination of intensity and extensity, usually considered contradictory to each other. Intensity and extensity are generally inversely related. But, in the person of Sri Ramakrishna, these

two have been uniquely blended. Swamiji 'discovered' this uniqueness in Sri Ramakrishna, saying: "He lived that great life—and I read the meaning."[34] Explaining this further, Swamiji said:

"The life of Sri Ramakrishna upsets all records of history. It is a remarkable phenomenon that in Sri Ramakrishna there has been an assemblage of ideas deeper than the sea and vaster than the skies. Such a unique personality, such a synthesis of the utmost of *Jnana*, *Yoga*, *Bhakti* and *Karma*, has never before appeared among mankind. The life of Sri Ramakrishna proves that the greatest breadth, the highest catholicity and the utmost intensity can exist side by side in the same individual, and that society also can be constructed like that, for society is nothing but an aggregate of individuals."[35]

Swami Vivekananda, however, knew very well that society cannot produce Ramakrishnas in large numbers, although he mentioned it as a theoretical possibility. He knew that such beings are 'few and far between' and cannot be created in great numbers. He, therefore, came up with a brilliant idea of 'collective harmony' by a group of persons. In a letter to Kidi, his dear disciple, Swamiji expounded this concept of collective harmony:

"Ramakrishna was such a harmony. Such beings are few and far between; but keeping him and his teachings as the ideal we can move on. And if amongst us, each one may not individually attain to that perfection, still we may get it collectively by counteracting, equipoising, adjusting and fulfilling one another. This would be a harmony of a number of persons, and a decided advance on all other forms and creeds."[36]

In fact, Swami Vivekananda founded the Ramakrishna *Sangha*, the Ramakrishna Math and the Ramakrishna Mission, based on this concept of 'collective harmony' in order to experiment with its actualization in society. The model, the inspiration and the ideal for this endeavour is the divine personality of Sri Ramakrishna, the Prophet of harmony and synthesis in the present age. The present age is the age of globalization and liberalization. The whole world has shrunk into a global village. Unification is now the

watchword. Grand unification theories (GUTs) are being attempted by the world of science, especially physics. Ramakrishna-Vivekananda message of harmony and synthesis with peace and universal well-being following as a natural consequence is the crying need of today's world, as embodied in Swamiji's call at the Chicago Parliament of Religions in 1893: "Help and not fight; assimilation and not destruction; harmony and peace and not dissension."[37] It is this new *weltanschuuang* engendered from the *bhavamukha* perspective that can save humankind from the dangers and ills of fragmentary thinking conditioned by 'narrow domestic walls'. And, Sri Ramakrishna, the Prophet of universal harmony and synthesis, is the centre around which the global community should 'enthusiastically rally' 'for the good of the many, for the happiness of the many' — *bahujana hitaya, bahujana sukhaya*. This would herald the *satya yuga*, the legendary golden age, that Swami Vivekananda proclaimed as having been born with the advent of Sri Ramakrishna, the *yugavatara*, the Divine Incarnation of the present age, abiding in *bhavamukha*.

References:

[1] *The Complete Works of Swami Vivekananda*, Vol. VI, pp. 181, publ. Advaita Ashrama, Mayavati, Himalayas (available at Advaita Ashrama, Dehi Entally Road, Kolkata 700014).

[2] Even Shankara, the famous Advaita Acharya, accepts this non-difference of *Brahman* and Brahma-Shakti, *vide* his commentary on the last verse (no.27) of Chapter 14 of Bhagavadgita. See footnote 12 below.

[3] Shankara's *Brahma-sutra-bhashya*, 1.1.11

[4] *Ibid.* 1.4.22

[5] *Sri Sri Ramakrishna Lilaprasanga*, translated into English as *Sri Ramakrishna and His Divine Play* by Swami Chetanananda, publ. Vedanta Society of St. Louis, 1st Edn, (2003), p.436, hereafter referred to as *Lilaprasanga*.

[6] *The Gospel of Sri Ramakrishna*, publ. Ramakrishna Math, Chennai (1989), pp.134-5 (hereafter *The Gospel)*

[7] *The Complete Works of Swami Vivekananda*, Vol.1, p.17, publ. Advaita Ashrama, Mayavati, Himalayas (hereafter *Complete Works)*

[8] Swami Yatiswarananda, *Meditation and Spiritual Life*, publ. Ramakrishna Math, Bangalore, 6th reprint (2001), p.xii (hereafter *Meditation and Spiritual Life*)

[9] The term 'aspect' used in this paper in regard to *Nirguna* and *Saguna Brahman* should be taken as meaning 'state' or 'mode' to correspond to the Sanskrit word *bhava*.

[10] *Lilaprasanga*, p.447

[11] *Sri Sri Ramakrishna Kathamrita* (in Bengali), 12th impression (2004), publ. Udbodhan office, Kolkata, p.899 (in the original Bengali edition)

[12] Shankara's commentary (Bhashya) on the Gita, verse 14.27

[13] *Lilaprasanga*, p.233

[14] The author owes this idea of 'alogical mysticism' to Swami Tapasyanandaji

[15] Sister Nivedita, *The Master as I saw him*, Udbodhan Office, Kolkata, 14th edn (1987), p.20 (hereafter *The Master as I saw him*)

[16] *Chhandogya Upanishad*, 1.6.6.

[17] Shankara's *Bhashya* on *Kathopanishad*, 1.3.10

[18] *Kathopanishad*, 1.3.10-11

[19] This discussion is taken from Swami Nikhilananda's notes on his new translation of the Upanishads, publ. Harper & Brothers Publishers, New York (1949), Vol.1, p.153-4

[20] *Lilaprasanga*, p.447

[21] The term 'identity' used here is a translation of the Sanskrit word *ekatva* used by Shankara in his commentary on *Mandukya Upanishad* quoted at footnote 22 below. Since Shankara chooses to use the same term *ekatva* in regard to *Atman-Brahman* unity as well as in respect of micro-macro unity of the triad: *Visva-Virat*, *Taijasa-Hiranyagarbha*, *Prajna-Ishwara*, we have chosen to retain the same term 'identity' in both the cases.

[22] See Shankara's commentary on *Mandukya Upanishad mantra* 3: "The identity of *Vaisvanara* and *Virat* indicates the similar identity of *Taijasa* and *Hiranyagarbha*, and also of *Prajna* and *Avyakriti* or *Ishwara*."

[23] *Sri Sri Ramakrishna Kathamrita* (in Bengali), 12th impression (2004), publ. Udbodhan office, Kolkata, p.317 (in the original Bengali edition)

[24] *Lilaprasanga*, p.421

[25] *Ibid*, pp.422-3

[26] *Ibid*, translator's footnote at p.423

[27] *Lilaprasanga*, p.426

[28] *Katha Upanishad*, 1.3.10-11; 1.3.13

[29] *Meditation and Spiritual Life*, p.xii

[30] The term 'oneness' is used here in the sense of *ekatva* used by Shankara — see footnotes 21 and 22 above.

[31] *The Life of Swami Vivekananda* by his Eastern and Western disciples, 6th edn, publ. Advaita Ashrama, Mayavati, Himalayas, Vol.1, p.250
[32] The author owes this idea to Swami Tapasyanandaji
[33] Romain Rolland, *The Life of Swami Vivekananda and the Universal Gospel*, publ. Advaita Ashrama, Kolkata (1997), p.281
[34] *The Master as I saw him*, pp.167-8
[35] *Complete Works*, Vol.7, pp.411-2
[36] *Letters of Swami Vivekananda*, publ.Advaita Ashrama, Kolkata (1986), pp.68
[37] *The Complete Works*, Vol.1, p.24

EIGHTH ACADEMIC SESSION

15 January 2006

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The Conscious versus the Subconscious: A View through the Neurobiology of Memory

SUMANTRA CHATTARJI

Introduction

"Men believe themselves to be free, simply because they are conscious of their actions, and unconscious of the causes whereby those actions are determined."

— Baruch Spinoza, *Ethics*

One of the most powerful ideas that I imbibed from my days as an undergraduate student of Physics, at the Ramakrishna Mission Residential College in Narendrapur, was not rooted in some complex law of thermodynamics or quantum mechanics – but a deceptively simple quote from Sri Ramakrishna that captured his tolerance towards different points of view. A rough translation of his saying in Bengali — "*Jato mat, tato path*" — would endorse the remarkably progressive opinion that there are many different paths to reach the same goal. Of course, Sri Ramakrishna put forward this tolerant view in a spiritual context, partly to reiterate the equality of religious beliefs. So, as a scientist, why am I recalling this particular quote from Sri Ramakrishna? There are two reasons, one academic, and the other more selfish!

First, any discussion that even remotely touches upon the challenging subject of 'consciousness' quickly becomes – touchy! The number of differing opinions on the subject often outnumbers individuals debating any particular aspect of this vastly complicated subject that has, over the centuries, tormented the brightest minds from all walks of life. What is particularly striking about any discussion on the subject is that, there is absolutely no dearth of

views on a matter where there is not even a basic consensus on what the term 'consciousness' means. The word 'consciousness' may mean one thing to a philosopher and something quite different to a cognitive neuroscientist, which in turn may have very little in common with someone whose views are based on, say, meditation or intensely personal spiritual experiences. Hence, if there was ever a need for pluralism of ideas, this may be it! In other words, in keeping with Sri Ramkrishna's famous quote, it may be advisable not to pass any *a priori* judgment on any particular path leading to a better understanding of this subject, however incomplete that framework may appear in someone else's view.

The second reason for starting my essay by taking refuge in "*Jato mat, tato path*" is to seek some measure of amnesty before I describe scientific findings that will undoubtedly be viewed by some as shockingly 'reductionist'. In this context, I must confess that, like most of my fellow neuroscientists, I get cold feet at the prospect of dealing with issues related to the 'conscious' or 'subconscious' matters that are well outside my area of research or academic training. Bread and butter issues of modern neuroscience, such as, vision, memory, neurological disorders are challenging enough – who needs to venture into something even more complex and ill-defined? This is what causes most neuroscientists to steer clear of the business of 'consciousness'. As the title of this article suggests, I have foolishly decided to take a crack at one narrow slice of this vastly complicated problem of 'the conscious versus the subconscious'. And, I hope to do this by describing to you some scientific findings from an area of neurobiology that is close to my own experimental research – the study of how the brain changes as a result of experience and how these changes lead to the formation of various types of memories, some of which are accessible to conscious recollection while others are not.

Memories come in Different Flavours

Some experiences are memorable, others forgettable. In our daily lives, we have to make a conscious and continuing effort to remember facts and events – memories of places or specific

incidents, phone numbers, names, dates, appointments, etc. These memories of facts and events are broadly classified as *declarative* or *explicit* memories that are accessible to conscious recollection. Based on our personal experiences, we all know how these conscious or explicit memories of facts and events tend to fade away with time. In striking contrast, memories of emotional events are often very powerful and persistent. These emotional memories fall under the broad category of *implicit* memories. One striking feature of these implicit memories is that their recollection is not necessarily under our conscious control. For example, if you were robbed on a particular street and return to the same neighborhood years later — the bad memories will come rushing back to you, even if you do not want to think about it. No matter how hard you may try, that place will always evoke a sense of fear and anxiety. We all remember, often in great detail, events that are intensely emotional – either a very happy or sad incident in our lives. Indeed, a memory that is factual in nature can become a lot more potent if it has an emotional content. The numbers '9/11' may not carry any particular significance for some – but, they can also trigger emotionally potent memories that will last for a lifetime for someone who was in New York on that fateful day of September 11, 2001. Much of the early scientific effort in trying to examine these two types of memory, explicit and implicit memory, came from detailed psychiatric and cognitive analyses of human patients suffering from memory problems. Hence, before I discuss some of the neural processes that underlie memory formation, let me set the stage by narrating a few fascinating anecdotes from these patient studies.

Dr. Claparede and a Memorable Hand-shake

In the early part of the 20th century, the Swiss psychiatrist, Dr. Edouard Claparede was treating a female patient who was incapable of forming new memories as a result of brain damage. Although Dr. Claparede was meeting her everyday, even several times a day, she had absolutely no recollection of having met him before. This memory problem was so debilitating that every time Dr. Claparede left the room, even for a few minutes, he had to

reintroduce himself to her when he returned to the room. Strikingly, her basic mechanical and reasoning skills, along with most of her older memories were preserved. However, beyond the duration of a few minutes, the recent past was lost to her. Dr. Claparede, tired of going through the same routine of introducing himself everyday with a hand-shake, decided to try something new – he hid a pin in his palm before their next meeting (not advisable for doctors in the 21st century!). As usual, they met that morning, but during their customary hand-shake, she quickly pulled her hand back after being pricked by the pin hidden in Dr. Claparede's palm. The next time Dr. Claparede returned to the room, he had high hopes that something would be different – that pin-prick may jog her memory of him. To his dismay, she still had no memory of Dr. Claparede, no memory at all of the previous day! Surprisingly, she refused to shake hands with him, without being able to explain why. The amazing thing is that, although she was unable to make any conscious recollection about Dr. Claparede or any specific facts about her experience the day before, she still had a subconscious sense of danger. In other words, although the patient failed to form a conscious memory of the situation, subconsciously she had learned that shaking the doctor's hand was dangerous.

This case provides a striking example of the implicit and explicit memory systems I introduced earlier. On the one hand, the patient failed utterly to recognize the face and the voice of the doctor she had encountered every day for months – a clear deficit in the patient's ability to consciously access factual memories. At the same time, somehow, buried in her mind, she subconsciously remembered a threat – a very strong implicit memory of an aversive experience. During Dr. Claparede's time, the appropriate tools were not available to examine these memory problems in greater detail. However, modern studies of brain mechanisms of memory have provided us with new insights into the underlying processes. More than a century after Dr. Claparede played his little trick with the hand-shake, it now seems that he was observing two different memory systems in action — while her explicit or declarative

memory system was impaired, her implicit memory system was doing perfectly fine. Moreover, these two memory systems, even within the context of the same experience (i.e., yesterday's memory of meeting the doctor and shaking his hands) were going in opposite directions – the factual memory system was going down even as the emotional memory system was fully active. This contrast between the conscious (factual) and subconscious (emotional) memory systems is an important theme that I will build up in greater detail in later sections.

Before I go on to present more cases from human patients, this is a good place to summarize two key facts about brain mechanisms underlying these two forms of memory. Over the past few decades, a large body of experimental evidence from humans, primates and rodents has identified two specific brain areas that are required for these two memory systems. Memories of facts and events depend on a brain structure called the hippocampus. On the other hand, emotional memories are processed by another area of the brain called the amygdala. If Dr. Claparede had brain imaging techniques that we now have, he would have probably observed significant differences in the amygdala and hippocampus of his female patient. In the second half of the 20th century, this link between the hippocampus and factual memory, on the one hand, and the amygdala and emotional memory, on the other, has been demonstrated very elegantly through detailed studies of human patients. Two such cases are described below.

The Case of H.M.: Trapped in a Mental Time Warp

During the first half of the 20th century, attempts by neuroscientists to find the locus of memory in the brain turned out to be unsuccessful. This futile search led brain researchers to conclude that the encoding of memory is likely to be spread across the brain as a distributed system rather than being mediated by any specific area of the brain. This situation, however, changed dramatically with the famous case of a patient – known in the field of memory research by his initials H.M. In 1953, H.M., a young man of twenty-seven, had to undergo a radical operation to treat

a severe and intractable case of epilepsy that could no longer be controlled with medications. During this surgical procedure, doctors removed large regions of his temporal lobes on both sides of his brain that contained the 'foci' of the epileptic seizures. The surgery was effective in controlling the symptoms of H.M.'s epileptic seizures. However, the surgery had an unexpected and unfortunate impact on his ability to learn and remember. Following the surgery, H.M. was unable to form explicit or conscious long-term memories of facts and events. Strikingly, H.M. was able to recall things that took place before his surgery, but he had a severe deficit in committing *new* information into long-term memory after the operation. Further, while H.M. seems to forget almost everything that happened to him (i.e., his long-term memory of facts and events is severely impaired), he can still hold on to information for a few seconds (i.e., his short-term memory was unaffected). Since the mid-1950s H.M., the single most important case study for understanding memory, has been the focus of extensive psychological testing. While a detailed description of the results from these studies is beyond the scope of this article, here are a few examples of how severe his memory problems are:

- Even with thousands of repetitions, he is unable to learn new facts.
- His doctors must reintroduce themselves each morning (much like Dr. Claparede's patient).
- He relives his grief over the death of his mother every time he hears about it.
- Does not know where he lives or what he ate at his last meal.
- Never knows exactly how old he is (he guesses, may be thirty and is always surprised by his reflection in the mirror).
- He still thinks Harry Truman is the President of the USA (because Truman was indeed the President when he had his brain surgery).

As severe as these memory problems have been for H.M., there are three important facets that also make his case very significant. First, studies on H.M. clearly indicate that his problems

with forming new memories have nothing to do with his overall intelligence because his I.Q. after the surgery remained normal. He is in no way deficient in his ability to think or reason and his language skills are intact. He is simply unable to learn and remember. Second, although his ability to form new memories of facts and events are severely impaired, other memory systems remain functional. For example, he is able to solve puzzles or perform tasks that require motor skills. With repeated practice, H.M. exhibits improvement in his performance of motor or puzzle-solving skills at a rate similar to those displayed by normal human beings. But, every time he is asked to perform these tasks, he claims that he has never seen or performed these tasks or solved these puzzles before, yet at the same time, he performs better than before. In other words, procedural/motor learning, which falls under the broad category of implicit learning and memory, was not affected by the surgery. Therefore, as severe as his explicit memory deficits are, they are also rather specific, and restricted primarily to the domain of facts and events. Finally, and most importantly, these memory deficits can be traced to the location of the damage in his brain. Unlike Dr. Claparede's patient, H.M.'s brain damage, and its functional consequences in terms of specific memory deficits, was caused by a precise surgical removal of brain tissue in the temporal lobes that included the hippocampus and adjoining areas. Therefore, the famous case of H.M., taken together with subsequent studies on other such patients over the past few decades, has established that the hippocampus is a brain structure that is critically important for the formation of conscious long-term memories of facts and events. (Figure 1)

The Case of S. M.: The Amygdala and Emotional Memories

Let us now turn our attention to implicit memory, the system that seemed to be intact in Dr. Claparede's patient and H.M. For the purposes of the present discussion, we shall focus on one potent form of implicit memory — emotional memories. As mentioned earlier, a brain structure called the amygdala is critically important for the creation of emotional memories, such as,

memories of fearful or stressful experiences. The case of S.M., a female patient with congenital amygdaloid degeneration, was studied using a form of classical Pavlovian conditioning.

As we all know, Pavlov's famous dogs exhibited a very simple, yet robust form of associative learning. In his classic experiments, Pavlov trained dogs to associate the ring of a bell with food. The basic experimental paradigm is as follows. A neutral stimulus, like the ring of a bell, that by itself would not trigger salivation in a dog, would be associated with food, something that always triggers salivation. During the learning or 'conditioning' phase of the experiment, the bell rings would be followed every time with food. After a few such bell-food pairings, the dogs would then be tested with the bell ring alone, and that would be enough for the dogs to salivate. In other words, a few instances of pairing the bell with food causes the dog to *learn* that a ring of the bell predicts food, such that even if the bell rings alone at a later time, that would be enough to trigger the full-blown response normally caused by food. In this 'classical conditioning' paradigm, the salivation is termed as the 'conditioned response'. The food, which by itself will always evoke the conditioned response, is called the 'unconditioned stimulus', while the bell-ring is called the 'conditioned stimulus'.

A variation of this same classical conditioning paradigm was used to study the effects of amygdaloid degeneration in patient S.M. Instead of the bell ring, the subject was shown a blue rectangle on a computer screen. Further, every time the blue rectangle appeared on the screen, the subject was given an electrical shock. In other words, 'blue' was the conditioned stimulus (because by itself it was a harmless stimulus), while the shock was the unconditioned stimulus, because it would always evoke a fear response. In the case of such human studies, the conditioned response is manifested as an increase in skin conductance. Similar to Pavlov's dogs, a few pairings of 'blue' with 'shock' would cause the subject to learn that the color 'blue' predicts an aversive experience — an electrical shock. After a few such learning trials, when 'blue' alone is presented, the subject shows a robust fear

response in the form of a significant increase in skin conductance — demonstrating that as a result of this conditioning experiment the otherwise innocuous colour 'blue' now signifies danger. While normal human subjects were capable of exhibiting this robust form of fear learning, the patient S.M. failed to do so. She showed no fear response whatsoever. Thus, the patient fails to learn the colour-shock association and displays no subconscious fear response. The important question is — does the patient have conscious knowledge of the colour-shock association? Does she 'know' that the colour blue means shock? The answer, from this study, was – 'Yes!' She clearly knew that 'blue' means 'shock' – she explained to the scientists that she had no trouble understanding that 'blue' predicts 'shock'. But, she exhibited no signs of a subconscious fear response. S.M. had exactly the opposite problem to that of Dr. Claparede's patient. This, along with similar studies in humans and animals, has firmly established a pivotal role for the amygdala in forming memories of fearful events.

In summary, S.M. had an intact conscious/explicit memory system (since her hippocampus was unaffected), while her subconscious implicit memory system was severely impaired (because her amygdala was damaged). (Figure 2) In contrast, patient H.M.'s problems with factual memories were caused by damage to the hippocampus. (Figure 1)

The Cellular Basis of Information Processing in the Brain

The above studies with humans demonstrate the critically important roles played by the hippocampus and amygdala in processing two radically different flavours of memories. In the remainder of this article, I shall switch gears and describe some recent findings from my own research, which focusses on neural mechanisms at a level of resolution that is not captured in the studies described above. Specifically, I will focus on specific cellular and molecular changes in the hippocampus and amygdala that may underlie their contrasting memory outputs at the behavioural levels. To this end, we first need to understand the basic grammar of how information is communicated between brain cells or

neurons. Neurons receive information, from other neurons, on specialized branches called dendrites. (Figure 3) This information is integrated at the soma, the centre of the neuron. While dendrites serve as the 'input' end of the neuron, the neuron also has a specialized 'output' end, called the axon, which sends information out to other neurons. Finally, the contact point between two neurons, where the output axon of one neuron impinges on the dendritic input of another neuron is called the 'synapse'. (Figure 3, inset) In other words, the synapse is where one neuron passes on information to another neuron. Now, what do I mean by 'information'? While a detailed scientific answer to this question is beyond the scope of this article, let me try to convey the essence of how neurons communicate through the synapse. When a neuron is activated by a stimulus, as a result of some sensory input like light (the colour 'blue') or sound (the ring of a bell), it gives rise to a rapid and transient electrical signal — known as the 'action potential' — in its soma. This action potential then travels down the axon (the output end of the neuron). This action potential, which is the basic currency of electrical signalling in the brain, represents a transient (in the order of a millisecond) change in electrical potential (approximately in the order of tens of millivolts). Ironically, the axon terminal does not physically contact the dendrite, but there is actually a tiny gap (less than a micron) between the axon terminal and the beginning of the dendrite of the next neuron. (Figure 3, inset) Once the action potential reaches the end of the axon, i.e., the junction where that axon forms a synapse with the dendrite of the next neuron, it causes the release of a specialized chemical called a 'neurotransmitter'. These neurotransmitters diffuse across the synaptic gap and reach the dendrite of the next neuron, where they bind to specialized molecules, called 'receptors'. Upon binding neurotransmitters, these receptors allow various ions to flow in and out of the next neuron, which in turn gives rise to an electrical signal in that neuron. This constitutes the synaptic response of the second neuron, triggered by the action potential that was fired by the first neuron.

In summary, an electrical signal in the first neuron (the action potential), causes chemical signalling in the form of neurotransmitter released from that neuron, which eventually gives rise to another electrical signal in the second neuron in the form of a synaptic response. This process of electro-chemical signalling, lasting for about a millisecond, is the essence of 'synaptic transmission' of information between two neurons. Over the past three decades or so, a growing body of experimental evidence suggests that memory formation involves changes in synaptic transmission, through an increase and decrease in synaptic strength. This ability of the synapse to modify its efficacy as a result of an experience is termed as 'synaptic plasticity'. In other words, synapses are not static entities, rather they are highly malleable or plastic, and their strengths in terms of transmitting information can be modulated by the process of learning and memory. The central dogma in the search for a cellular mechanism for learning and memory is that 'synaptic plasticity' is what mediates the process of experience-induced changes in the brain.

The Hippocampus versus the Amygdala: What is Different?

Armed with this rather simplistic, but hopefully adequate view of synaptic transmission and plasticity, I will now try to describe a few findings from my laboratory that shed some light on the cellular and synaptic difference between the hippocampus and the amygdala. In light of the earlier discussions on the explicit (conscious) and implicit (subconscious) memory systems, my laboratory is interested in understanding why memories of emotional events are often more powerful and persistent. The heart of this problem is to explain global changes in network output, on the basis of local changes in individual neurons in the hippocampus and amygdala. Stress disorders bring these questions into sharp focus because chronic stress has contrasting effects on different types of memories. Stress impairs memories of facts and events, which depend on synaptic plasticity in the hippocampus. In contrast, stress greatly amplifies emotional memories, which are processed by the amygdala. But, little is known about the neural

basis for this contrast. Therefore, we study the effects of stressful experiences on synapses, cells and microcircuits in the hippocampus and amygdala, by using a combination of behavioural, neuroanatomical, computational, genetic engineering and electrophysiological techniques. Using this multi-level and multi-technique strategy, we have identified several novel neural correlates of stress-induced plasticity in the amygdala, which are strikingly different from those observed in the hippocampus. A few of these experimental observations are summarized below.

First, we studied the effects of chronic stress on hippocampal and amygdaloid neuronal structure in rats. A growing body of evidence has demonstrated that chronic stress can cause hippocampal damage. Specifically, previous studies on how stress and stress hormones affect the rat hippocampus revealed that chronic stress produces significant shrinkage or *atrophy* of the dendritic tree of neurons in the hippocampus. In striking contrast, we find that, chronic stress causes growth or *hypertrophy* of the dendritic arborization of neurons in the amygdala. (Figure 4) In other words, the input end of the neuron, which receives synaptic information from other neurons, shrinks in the hippocampus, but grows bigger in the amygdala, all as a result of the same stressful experience. This provides a striking cellular basis for how the same experience can lead to dramatically opposing responses from the two memory systems — hippocampal neurons are going downhill, while amygdaloid neurons get stronger.

Second, this stress-induced hypertrophy of dendrites in the amygdaloid neurons is accompanied by a significant increase in the number of synapses on these dendrites. The synaptic contacts on these neurons, as described earlier, are formed on small protrusions on the dendrites, which look like tiny thorns sticking out from the dendritic shaft. (Figure 6, inset) These are called 'spines' and are the physical structures on which synapses are formed. Using high-powered microscopes, we can count the number of spines per unit length of dendrite and get an estimate of the density of synapses on any given neuron. Using such measures,

we found in the amygdala that chronic stress not only causes an elongation of the dendrites, but also causes an increase in the spine density on these dendrites. Taken together, these findings suggest that stress leads to a significant strengthening in the overall synaptic connectivity of amygdaloid neurons. (Figure 4)

This, in turn, raises the question – what do these newly formed synapses look like? Put in another way, what does this increase in synaptic connectivity mean in terms of synaptic transmission and plasticity? As you may recall from the earlier discussion on basic mechanisms of synaptic transmission, the chemical part of information transfer between neurons was mediated by 'neurotransmitters'. (Figure 3, inset) At synapses in the amygdala and hippocampus, the principal neurotransmitter is glutamate. Glutamate, once released, can bind to several subtypes of 'receptors' in its target neuron. There are two broad classes of glutamate receptors at these synapses in the amygdala – one goes by the acronym AMPA-receptor, and the other by the acronym NMDA-receptor. AMPA-receptors mediate basal synaptic transmission, while NMDA-receptors are crucial for initiating plastic changes at synapses (i.e., strengthening or weakening of synaptic connections). Over the past two decade, many laboratories have demonstrated that NMDA-receptors are necessary for synaptic mechanisms that lead to the formation of factual memories in the hippocampus, and emotional memories in the amygdala. These, and many other studies, have established NMDA-receptors as the 'silver bullet' for synaptic plasticity mechanisms underlying experience-induced changes in the brain in general, and learning and memory in particular. Specifically, NMDA-receptors play a critically important role in mediating biochemical process that enables synapses to become stronger as a result of experience-induced activity. This NMDA-dependent mechanism of synaptic strengthening, the technical jargon for which is long-term potentiation (LTP, in short) is a key step in the formation of new memories in the hippocampus. For example, genetically engineered mice which specifically lack NMDA-

receptors in the hippocampus, and thereby have impaired LTP, are unable to form spatial memories.

Chronic stress, which causes dendritic atrophy in the hippocampus, also leads to the suppression of NMDA-receptor dependent synaptic plasticity mechanisms (like LTP) in the hippocampus and also impairs spatial memories in rats. Taken together, this gives rise to a rather grim picture of the hippocampus of an organism that has undergone severe stress – shrinking dendrites, loss of synaptic plasticity, and impaired ability to form explicit memories. In striking contrast, the same chronic stress causes the amygdaloid neurons to have stronger synaptic connectivity. Further, using electrophysiological recording techniques, we find that the new synapses that are formed in the amygdala after stress contain more NMDA-receptors! In other words, the amygdaloid neurons, unlike their hippocampal counterparts, are doing rather well after stress – more dendrites, more synapses on these dendrites, and more NMDA-receptors in these synapses. As mentioned above, the availability of more NMDA-receptors would give these synapses a greater capacity for strengthening because they are loaded with the 'silver bullet' for synaptic plasticity. Indeed, we find that synaptic inputs to amygdaloid neurons are capable of exhibiting larger LTP or synaptic strengthening. This in turn predicts that any kind of memory formation that depends on LTP and NMDA-receptors in the amygdala should also be stronger in an animal that has undergone prior stress. In other words, the cellular results described so far lead to a specific prediction at the behavioural level — stress causes the amygdala to reach a state of heightened plasticity whereby it gives rise to abnormally high levels of subconscious fear memories.

Stress-induced Plasticity in the Amygdala and Its Behavioural Consequences in Terms of Subconscious Fear

We tested this prediction by subjecting stressed and normal unstressed rats to our old friend, Pavlovian fear conditioning. First, one group of rats were subjected to chronic stress for 10 days, while another group was maintained under normal conditions. Two

days after the end of the 10-day stress protocol, in keeping with the paradigms described earlier, both stressed and unstressed groups of rats were first conditioned to associate an innocuous sound tone (the conditioned stimulus) with an electrical shock (the unconditioned stimulus). The day after this tone-shock association, the animals were tested with the tone alone. In this case, the conditioned response, the behavioral measure of the learned fear, is quantified in terms of the level of freezing (i.e., complete cessation of movement except for breathing) exhibited by the animals. In other words, the greater the level of freezing, the stronger the fear memory. We find that the animals that were previously stressed show a significantly higher level of freezing in response to the tone compared to the unstressed animals. Thus, as predicted, prior exposure to stress greatly enhances subconscious fear in these animals. This is opposite to stress-induced deficits in hippocampus-dependent explicit memories. In summary, we find that the amygdala and hippocampus display dramatically contrasting forms of plasticity in response to stress at multiple levels of neural organization. (Figure 5)

Concluding Remarks

I have presented a glimpse of how modern tools of neuroscience research are beginning to address complex questions related to cognitive and emotional information processing at multiple levels of neural organization. Admittedly, by discussing the neural mechanisms mediating explicit and implicit memory systems, I have focussed only on one narrow aspect of the much bigger problem of 'consciousness'. Of course, I could be accused of a 'cop out' by choosing to restrict the discussion to the more tractable problem of memory systems. But, as I said at the beginning of my article, as an experimentalist, I can only comment on something I can measure and manipulate – that is the only way we know how to make and test specific predictions. Despite the inherent limitations of such a reductionist approach, it does allow us to break a challenging problem down into smaller manageable pieces and study mechanistic details with greater clarity and precision. The

study of the cellular basis of conscious or subconscious memory systems obviously does not capture the full richness or complexity of the bigger problem, but it allows us to get a start, enough to get some traction on an otherwise slipper slope of endless quibbling over what 'consciousness' means or how it should be studied. In that sense what I have discussed here may be viewed more as a proof of principle that such a multi-level, multi-technique strategy can indeed yield some useful information, which may some day provide a better foundation to take on the more complex facets of the problem of consciousness.

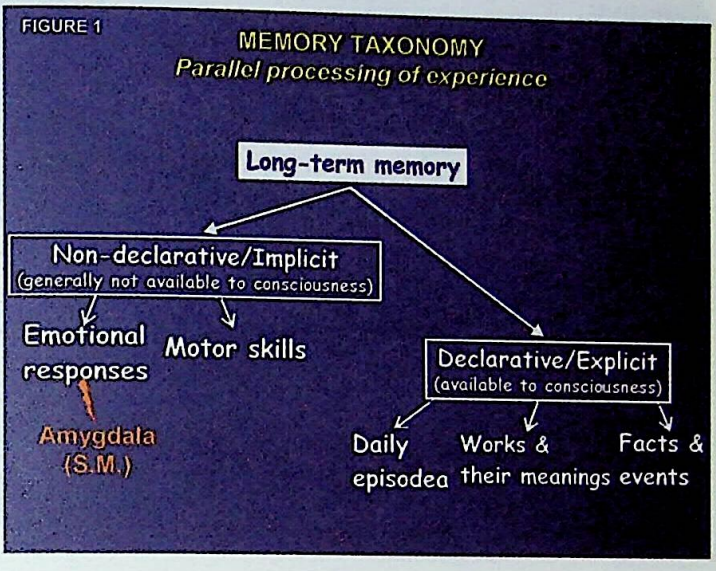


FIGURE 1
MEMORY TAXONOMY
Parallel processing of experience
Long-term memory
Non-declarative/Implicit
(generally not available to consciousness)
Emotional responses
Motor skills
Amygdala (S.M.)
Declarative/Explicit
(available to consciousness)
Daily episodea
Works & their meanings
Facts & events

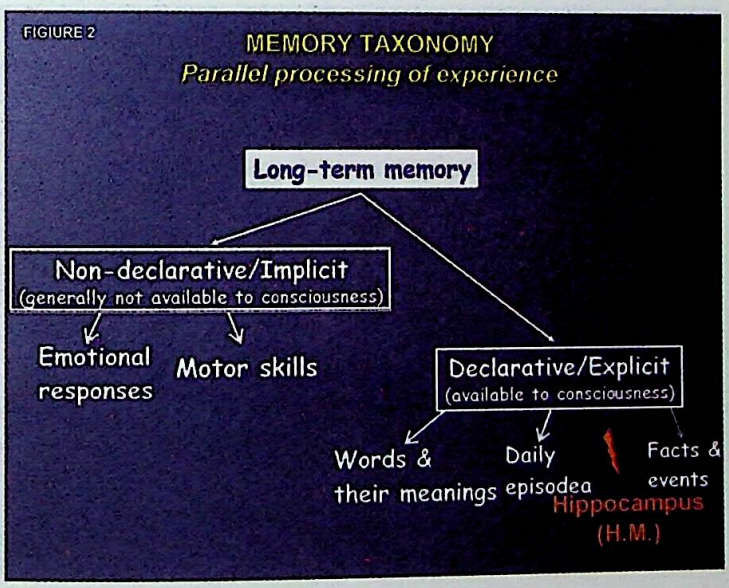

FIGIURE 2
MEMORY TAXONOMY
Parallel processing of experience
Long-term memory
Non-declarative/Implicit
(generally not available to consciousness)
Emotional responses
Motor skills
Declarative/Explicit
(available to consciousness)
Words & their meanings
Daily episodea
Facts & events
Hippocampus (H.M.)

FIGURE 3

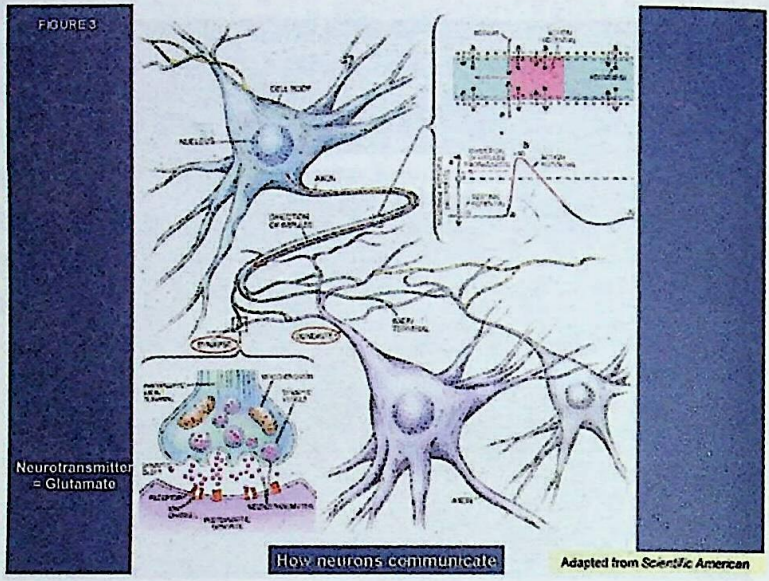
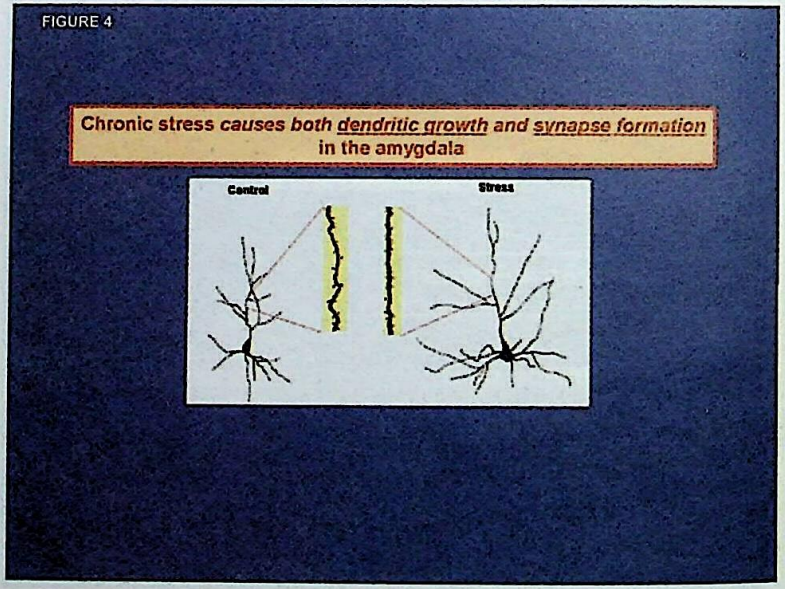


FIGURE 4



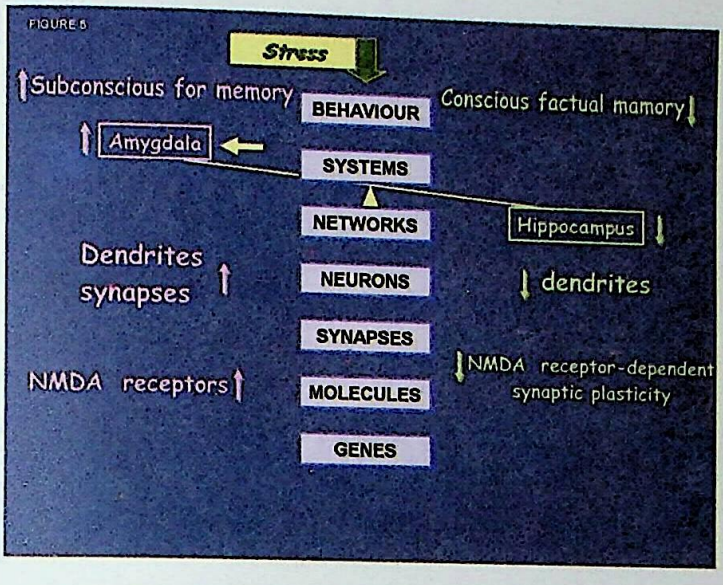


FIGURE 5
Stress
Subconscious for memory
Amygdala
BEHAVIOUR
SYSTEMS
NETWORKS
NEURONS
SYNAPSES
MOLECULES
GENES
Conscious factual mamory
Hippocampus
Dendrites
synapses
dendrites
NMDA receptors
NMDA receptor-dependent
synaptic plasticity

NINTH ACADEMIC SESSION

15 January 2006

Rāvana Mahāmati and Shākyamuni Buddha in the Ārya-Laṅkāvatāra-Sūtra

(A symbolic dialogue regarding the universal consciousness)

Suniti Kumar Pathak

Three Personalities in the Scenario

Arya-Laṅkāvatāra-sūtra (ALS) is one of the aphoristic delineation of the Buddhists in Sanskrit. In contents, the ALS deals with the universal consciousness having wide extension, *mahāvaipulya*.[2] Buddhism, in general, lays emphasis on the question of the ultimate reality of the mind and the matter *nama-rūpa*.[3] (Appendix A) The ALS is not an exception to that. Despite that, the *sūtra* is presented in a symbolic manner.

Because, consciousness, *vijñāna*[4] itself is inexplicable at the mundane and the supra-mundane levels, no speech can communicate what is consciousness. The ALS, therefore, evolves a unique technique to avoid the limitation of speech. A focus on the experience of consciousness, *vijñāna* in the functional mind and that in the introverted mind, *samādhi citta*[5] and in the retroverted mind, *parāvṛitta-citta* have been placed in three symbolic characters:

A. Rāvaṇa, the king of Laṅkāpuri, the land of *rākṣasa*
B. Mahāmati Bodhisattva
C. Śākyamuni Bhagavān, the Buddha

The ALS refers to the visit of Shākyaputra Gautama, the Buddha, otherwise named Shākyamuni, to the Malaya peak, *shikhara* adjacent to Laṅkāpuri, the seat of Rāvaṇa. As usual, Rāvaṇa appeared before Shākyamuni Buddha and paid his homage with pomp and show. The land of *rākṣasa* had been

described with splendour. But, the personality of Rāvaṇa was not similar to that mentioned in the Rama stories, particularly, that is in the Rāmāyana, ascribed to Vālmiki.

Rāvaṇa appeared before the Buddha with his retinues and praised the Buddha in *gāthā*[6] songs with a lute. The former welcomed the Buddha for his visit to Laṅkāpuri, in his introduction. He stated that he had been the king of *rākṣasas* and had ten heads. He also referred to the precedence of visiting Laṅkāpuri by previous *Sambuddha* personalities for deliberation of *dharma*, the truth that was to understand by the individual.

Rāvaṇa thereafter expressed his desire to know about what are *dharma*, the truth and its opposite, *adharma*. He praised Bhagavān mentioning that the latter had been accomplished in various modalities of the *Yoga* unification of the individual with the universe by the abstract contemplation — for the non-Buddhists and the *Sambuddhas* as well. Śākyamuni was absorbed in abstract contemplation, *samādhi* of the retroversion state of non-mind, *acitta*.[7] He remained silent in tranquility. (Appendix B)

Śākyamuni had overseen the psycho-spiritual capability of Rāvaṇa who played his part as best as he could. Meanwhile, Mahāmati Bodhisattva was entrusted to follow the procedure of dialogue in the question-answer pattern, *paripṛcchā-vyākaraṇa* as that had been customary. Whereas, Rāvaṇa entered into his own mental state with inquisitiveness through the functional mind of understanding the reality.

Śākyamuni Bhagavān, opened his physical eyes and smiled in order to confirm. The dialogue began at the mundane level with questions like:

(i) how did the knowledge become valid; (ii) how did an argument occur;

(iii) how was an error seen; and (iv) how did an error arise ?[8]

The above questions referred to the mental status of an ordinary person, who had been suffering in the discriminative dilemma caused by one's own thought-construction. That may lead to

several functions of psychic conditions in relation to the phenomenal world as perceived by the sense-organs.

Although Mahāmati Bodhisattva was mentally advanced than Rāvaṇa, he raised the above questions those occurred in his mind. Triple states of the mind belonging to the individual are described in an analogy. Such as, a pond has many lotuses. A few being blossomed rise above the water level; those which are yet to blossom are at the water level and the remaining ones are underneath water with mud.[9] That may further prompt to a question —what is consciousness? Mahāmati rightly put the same question in the following manner: how does a vision occur; how does that subside; how can the mind-consciousness function; and what is the wholesome consciousness? [10]

In response, the fourfold mindfulness about consciousness have been referred, e.g.,

(i) to be watchful how the internal and the external parts/limbs of a body act and reach; (ii) to be aware of multiple sensations that respond through five sense-organs like eyes, ears, nose, tongue and body; (iii) to cognize how the mind interacts with reference to the sensations stimulated by the sense-organs; and (iv) to be mindful of the phenomena and their nature in respect to other phenomena and their respective self-nature.[11]

The ALS deals with various sorts of consciousness that the individual experiences, in five chapters (II-VII) in a dialogue pattern. The last chapter adds a discussion about the question whether meat eating is permissible or not. Also, the *sagāthaka* portion is appended to the present text containing 884 verses. That leaves a room to presume that the ALS might have been in verses for occasional recitation, as the traditions of recital prevailed.

The Mindfulness in one's Mind

As stated above, each person in extrovert mental state to some extent is aware of one's own mind and its functional state. While a person is engaged in doing an action, he or she becomes aware of his or her own mind, body and the environmental phenomena. In order to perform a work, an amount of psychic balance, or to say

otherwise, one's conscious concentration is required. The social laws are, therefore, formulated to restrict any departure from the psychosomatic disbalance in behavioural actions. A person occasionally becomes disbalanced while he or she enacts, under the force of cravings, by the dark emotions, like allurement, hatred or delusion. On that occasion, a person undergoes offences by doing harm against others consciously, although he or she remains non-conscious of what is performed. That means, one fails to be mindful to observe one's own mind consciously. That is the disbalanced state of one's mind being led by dark emotions. The Rāmakathā legends symbolically narrate how Rāvaṇa, in spite of his determinable consciousness, failed to observe his own mind under the dark emotions. His mindfulness or his mind had been darkened by the veils of ignorance about the reality of the phenomenal worlds. The causal link between the seer and the object, i.e., I and you, has been explained in mathematical formula. (Appendix C)

The self-nature, *svabhāva* of the mind and consciousness is pure, non-wavering and calm like an ocean with no wave. The extrovert mind consciousness wavers and that occurs in the case of an ordinary person due to thought-construction, *vikalpa*. The scope of discriminating one from the other is no other than thought-construction. It is caused by the latent-impressions for habit inclinations in the ordinary mind as effectuated by the action what the individual performed in the past. That is named *vāsanā* in the Indian diction. Thus, *vāsanā* and consciousness in functioning *pravṛtti vijñāna* become interrelated and tend to generate thought construction in respect to an average person.[12]

Śākyamuni and Mahāmati Bodhisattva thereby became engaged in question-answer pattern dialogue to clarify the problem of the plurality of consciousness in detail, namely:

1. consciousness of the ordinary person functioning in the extrovert mind, *pravṛtti vijñāna*; 2. consciousness of the elevated persons whose minds remain concentrated in the introvert mind, *kliṣta mano-vijñāna*; and 3. wholesome consciousness in its extrovert state, *ālaya vijñāna*,[13].

The succeeding chapters (III-VII) clarify multiple points that may generate in course of understanding the self-nature, *citta-svabhāva* of the functional mind and the status of consciousness therein. Consciousness would undergo progressive or regressive changes under the functioning status of the mind and the mental faculties, *citta-caitisika dharma*. Those arise at three levels.

1. In the case of ordinary persons, the mind becomes extrovert, being liable to discriminate under thought-constructed problems, uncertainties, doubts, discriminations, etc.

2. By the sustained efforts for concentrating the mind through the observance of moral precepts, *shīla* and the restrained way of life, *brahmacarya*, the functioning mind and its faculties would enter in a state of concentration in the case of the introvert mind, i.e., *kliṣta manovijñāna*.

3. Lastly, the mind would become calm like an ocean with no wave. As there would be no waves of the latent impressions in the deep mind, the scope of being agitated by waves of phenomena would not be there in retrovert mind, *paravṛtta-citta*. It would become calm as the universal consciousness, *ālaya-vijñāna*.

The ALS mentions the procedure — how to attain the mental status of being retrovert through the sustained efforts and to be unified with the universal consciousness at the mundane and the supra-mundane levels.

Prescription for the Extrovert Mind

The mind and its faculties belonging to the average persons usually waver like innumerable waves in the sea in contact with the objects in the phenomenal world. That is the characteristics of the extrovert mind. In terms of psycho-science, the functional mind perceived through six sense-organs including the mind itself apperceives them for discrimination of good or bad, beautiful or ugly, pleasant or unpleasant, form or formless and so on. So, the functional mind is termed *citta* for accumulating psychic state in contact with phenomenal materials to nurture its multiple faculties. That makes the *citta* fickle in every moment under the influence of

conscious, non-conscious, and subconscious impressions belonging to the latent mind, *vāsanā*. Thereby the functional mind becomes engaged or occupied, otherwise it becomes perturbed in every moment by cognizing, recognizing the diverse worldly objects.

The Buddha, therefore, had prescribed how to practise moral precepts, *shīla* for lessening the numbers of afflictions after being perturbed. Those are of three ways: (i) proper speech (ii) proper action and (iii) proper means of livelihood. Here again, the problem of discriminating proper speech from improper speech stands.[14] The ALS, therefore, lays emphasis on the mindfulness of average persons in every case of the functioning state in body, speech and mind. Such mindfulness in every moment would refrain a person from being involved in improper speech, improper action and improper means of livelihood.

The psychic progress is a continuous process. That is to be followed every time with no lapse. Thereby, a person would experiment the import of each endeavour diligently. The ALS further analyses various kinds of functional mind in relation to their stimuli multiplied by the latent impressions the extrovert mind, *vāsanā* accumulated by proper and improper cravings for actions. Those are cravings (i) *kāma vāsanā* in accordance with pleasurable allurement, (ii) *rūpa vāsanā* for the forms as manifested before the sense organs in the alluring mind, (iii) *driṣṭi vāsanā* for lien to the apparent views to discriminate pleasant and unpleasant, and (iv) *bhava vāsanā* for being existent to avail, again and again, the above three through rebirths.

Eightfold Consciousness at the Three Levels

The ALS enumerates eight characteristics of consciousness in the extrovert and the introvert mind and above, such as:

1-5. Five sense consciousness arising in contact of the phenomenal objects in the empirical mind:
cakṣu vijñāna in contact of object relating to eyes, *cakṣu -indriya-āyatana*

ghrāṇa vijñāna in contact of object relating to nose, *ghrāṇa-indriya-āyatana*

sparśa vijñāna in contact of object relating to body, *kāya-indriya-āyatana*

śrotra vijñāna in contact of object relating to ears, *karṇa-indriya-āyatana*

swāda vijñāna in contact of object relating to tongue, *jihvā-indriya-āyatana*

6-7. The empirical mind prompts the mind-consciousness relating to the mind of the individual, *mano manovijñānam ca.*

8. *Ālayavijñāna* is the wholesome consciousness to which both functional mind-consciousness and talent consciousness belong. Generally, it is translated as store-consciousness by D.T. Suzuki.[15] On account of its unwavering status, *ālayavijñāna* is pure in its self-nature. Literally, it suggests the extensive status of consciousness in which all wavering are absorbed and from which consciousness arises empirically.

The ALS mentions the following characteristics of the *vijñāna* that remains latent in the mind, *citta*:

1. *vijñāna* is subject to origination and cessation, *utpanna-pradhvaṁśi*;

2. *vijñāna* falls into the notion of *nimitta* and *animitta* (sign and no-sign for its existent multiplicity, *nāstyasti-vaicitra-hetukan*);

3. *vijñāna* is characterized by assimilation, *upacaya*;

4. *vijñāna* has a symptom of being produced in triple concord of the origination, existence and cessation, *tri-sangati-kṣayotpāda-yogalakṣaṇam*; and

5. *vijñāna* holds the character of being multiple (*viṣaya-vaicitrasaha-lakṣaṇam*).[16]

All the characteristics mentioned here suggest that the extrovert mind holds such knowledge, which is generally known as the worldly knowledge, *laulika jñānam*, i.e., the knowledge linked to the dualistic view of being and non-being. Three modes of the functioning mind-consciousness may be characterized as the following for the world knowledge —

(a) *pravṛttilakṣaṇa*: characteristics of being extrovert involved to the phenomenal world; (b) *karmalakṣaṇa*: characteristics for producing effect by actions in the empirical mind; and (c) *jātilakṣaṇa*: status of originating character in generality.

Wholesome consciousness is pure *vijñāna*, i.e., *ālayavijñāna*. It appears through the evolving state of consciousness in cessation of the habit of thought-construction under the influence of latent *vāsanā*. The causes of the evolving state of *vijñāna* in the mind of beings are enumerated as four.

The Involvement in the Empirical Mind

The waves of the *pravṛttivijñāna* being stirred resemble the water of the flood owing to the four reasons given below:

(a) clinging to the external world not knowing that it is of the mind itself; (b) attachment to form and *vāsanā* or habit inclination accumulated since beginningless time by false reasoning and erroneous views; (c) self-nature inherent in the sevenfold consciousness, *indriya-mana-mano vijñāna*; and (d) empirical engagement for discriminating multiple forms and appearances.

These four reasons, according to the ALS, are responsible for the eye-consciousness or other sense-consciousness interacting with the apparent forms and matters of the objective world. Consciousness arises at once or by degrees, *yugapat pravṛtti kramaviṣaya* through the sense organs. As an image reflects on a mirror, or the wind sweeps over an ocean, or like the waves of the ocean, *citta* is stirred uninterruptedly by the phenomenal object. The inseparable evolving *pravṛitti-vijñāna* and the generating *jāti vijñāna* are but characteristics *lakṣaṇa*. The five types of sense-consciousness thus come to function or evolve being not comprehended by its self-nature.

It is now evident that the notion of the existence and non-existence of the external world and multiplicity of the objects therein functions in the evolving state of *vijñāna* in the extrovert mind. Due to the ignorance of its self-nature, *svabhāva* many notions arise.

***Pravṛttivijñāna*: Function-Consciousness**

The ignorant beings possessed with latent *vāsanā* see the manifestation of the world of objects in various forms and understand them as real. The manifestation of the external world in varied forms occurs in the empirical mind of a being on account of the evolving consciousness, *pravṛttivijñāna*. That arises out of the accumulating tendency of the *citta*. According to the *Laṅkāvatāra-Sūtra*, the evolving consciousness is related to the wholesome-consciousness, *ālayavijñāna*. As the waves come out of an ocean in the evolving state, the evolving consciousness appears out of the wholesome-consciousness, which is no other than self-nature expressing the pure spotless and transparent *citta-sphoṭa*.

It is now evident that the external world appears to the eyes of an average person as varied and existent on account of the perturbed perceiving faculties of the empirical mind and thought-construction under the *vāsanā* latent since eternity. The ALS claims that nothing is existent, no worldly object is varied and the world itself is not real. The *Laṅkāavatāra-Sūtra* refers to the commoners' views by following analogies:

(1) Images of trees are reflected on a surface of water and the average imagines that many trees stand, while no tree, in fact, exists there. In a similar way, the average perceives the existence of many things which are non-existent.

(2) An image appears on a mirror and the ignorant imagines that as real.

(3) An echo is heard but it has no real existence. Similarly, the world neither exists nor non-exists in the vision of the wise.

(4) In a desert, owing to the sunshine, some false image of water appears, but there is no water there. To the wise, the world is neither existent nor non-existent.[17]

The *Yogavāśiṣṭha Rāmāyana* deals with the psyche of the sentient beings under two opposite heads, the unawared mind, *ajñāna citta* and the awared mind, *jñāna citta*. The former refers to the non-conscious status of the mind being empowered by the

phenomenal world, *saṁsara.* The will-force becomes so powerful that it is capable of performing everything, and becomes *sarva-samartha*, a creator, *sraṣṭā* of the phenomenal world in which origination and decay move like wheels. Rāvaṇa, being of unawared mind, *ajñānacitta,* engaged himself in creating a new world order as he had constructed in thoughts. Rāvaṇa used symbolic apposition and claimed himself to be *iśvara* possessing eight superior attributes despite his unawareness of the true nature of the mind and that of the material objects.

The dialogue between Śukadeva and Janaka may be referred. Janaka's statement was that the wheel of the phenomenal world order was constructed by the wavering mind of an average person in his or her own way. Such thought-constructed phenomenal world was caused on account of being ignorant of the unwavering nature of the mind. As soon as the mind and its consciousness would be in the unwavering state with no scope of thought-construction, the functional mind, *citta* would introvert. That is the state of *samādhi* with no thought-construction. No waves for creating the phenomenal world would originate for decay, again and again, by *vāsanā* in the inner-self. The *Yogavāśiṣṭha* describes the non-afflicted mind of the yogins, i.e., *yogicitta.* The ALS aims also at such unwavering status of the introvert mind to which Rāvaṇa was initiated.

Rāvaṇa, being introvert could appreciate the self-nature of the mind and that of the phenomenal world. The latter was but thought-constructed by the mind itself. By such understanding, he experienced the calmness in his mind as inquisitiveness occurred no longer regarding *dharma* and *adharma*. He endeavoured to undergo deep contemplation in his mind.

Consciousness in the Introvert Mind

A *bodhisattva* like Mahāmati could appreciate the Buddha's directives towards the introvert mind which tended to enter in the tranquil calm silence through meditations. The ALS enumerates four *dhyāna*, meditations from the scratch stage.

1-2. Meditation in respect to the entrants in *dhyāna* with an inquisition about the respect of the infinite psychic space, which is so widely spacious that it has multiple spheres to roam. The ALS takes them from the primary level to experience the pleasant state, step by step up to the apparent coma state of the mind, *naiva-sajñā nasajñā*. Literally speaking, a Yoga-practitioner reaches that state of consciousness in his mind as if he is unconscious with no external sensation. That initiates to be engaged in the accumulation of complacent awareness what would be the goal.

3. The practitioner thereafter undergoes further state of consciousness that which experiences the nature of 'thatness' in the consciousness itself. But, that requires a support how to experience 'thatness' or *tathatā*. Two notions of the substantial existent regarding the aggregated body of the animate and that about a phenomenon dissolve to experience 'thatness'.

No-mind State of Consciousness, *acitta*

4. Lastly, the introvert practitioner experiences a unique state having no scope of any support or lien to the mind and its consciousness for enumerating three characteristics of sublime knowledge in respect to the individual. That is the pleasant state. That goes beyond thought process of an average person. Being equated with the sky, the introverted *yogi* remains in an inexplicable joy above any departure.

Tathāgata* and *Tathāgata-garbha

The nomenclature of the last state of the introvert mind, going beyond the thought process of an average person, is *tāthāgata*-meditation. That amounts to the retrovert mind and its consciousness as the ALS describes. Again, that state is technically nomenclatured as *paravṛtti*. In other words, it suggests to be reinstated in its self-nature. The core of the Buddha's teachings is that one should achieve his or her own state of mind, *svastha*. That is the good, *sukha* state as being opposite to the *duḥkha*, bad one. That is the goal to be achieved. That is retroversion to the self-nature of the pure mind.

The ALS refers to the tendency of reverse course of the average mind and its consciousness as well. That may be described in psychology as the retroversion of the mind as distinct from the stimuli of memory depending on the cerebral neuro-cognitive function. The ALS also mentions that as *vyāvṛtta citta*. That is also a functional mind in which the tendency of discriminating one from another subsides towards the mental equipoise.

Tathāgata is that state of the elevated mind being free from its discriminative functions. He experiences what is the mirage-like existence of the phenomenal world. An ordinary being is a part of the universe of phenomenal existence and is involved in thousands of duties and performances, *kṛitya-karaṇa* for others with no leisure. Tathāgata is, therefore, equated to both going and coming, becoming and non-becoming, by nature for his experience of the essencelessness, *śūnyatā* having no existence to experiment.

The ALS further initiates a unique state of wholesome-consciousness, *ālayavijñāna* experienced in the retroverting process. That becomes the quintessence of the *Tathāgata*-manifestation in order to be avowed Buddhas and Bodhisattvas. That is named *tathāgata-garbha.*

Notes and References:

1. Ed. Bunyio Nanjco, Kyoto, The Tokyo University Press, 1923.

2. Series of nine texts in enunciation of the Buddha's Doctrine *nava-dharma-paryāya* are enumerated in the Newar Buddhist tradition. Those belong to the *mahāvaipulya sūtra* class in Sanskrit.

3. *Nama* literally means naming. In the Buddhist specified meaning, four mental factors of an individual are, namely, sensation *vedanā*, cognition *sajñā*, psychic impressions *saṁskāra* and consciousness *vijñāna,* opposite to material phenomenon *rūpa*. That which holds a form,*rūpa* is to be designated. Both the words may be traced in the Vedas, though their contextual significances vary in Buddhism.

4 *Vijñāna* has been used in various meanings in Buddhism:

i) a mental constituent of an individual, otherwise corresponding to the consciousness in English,

ii) life force that extends over rebirth,
iii) the mental awareness through sense-organs as functions of the mind and the matter,
iv) principle of consciousness to lead the mind and its faculties to act in the phenomenal world, *prapañca*, and
v) mind of the individual in various status like conscious, non-conscious, unconscious, latent, transmitting state and so on.

5. *Citta, mana* and *vijñāna* in Buddhism appear similar, though they function separately. The ALS distinguishes *citta* as a dancer, *manas* as a buffoon *viduṣaka-sadriśa, vijñāna* as the accompanist in order to construct a scene of a performance, because an act is co-ordinated by dint of the accumulated *citta* and again, by the knowledge that is determined, while the wisdom gains no reflection. *Citta* becomes concentrated in course of proper exertion to one-pointedness. (ALS)

6. The teachings of the Buddha are divided in twelve kinds. Among them the *gāthā* metrical verses are regarded important for preservation.

7. ALS III 7-8. Nothing is deliberated by me during the period between the Attainment (*Bodhi*) and the Demise. Whichever was related by me of the state of individual understanding had been no special other than that of the previous Buddhas.

8. ALS. II. 12.

9. Pali Mahāvagga, Vinayapitaka ed. J. Kasspa

10. ALS. II. 20.

11. Pali, Satipaṭṭhāna Sutta.

12. ALS.II. 139; III. 74-78.

13. ALS.II. 102-104.

14. *Early Monastic Buddhism*, N. Dutt, Calcurtta, 1930. p. 59

15. Eng. Translation: The Lankavatara sutra by D.T. Suzuki.

16. ALS. VI. pp 235-239.

17. ALS. II. 145-148 pp 90-92.

18. ALS. pp 82-83.

19. *Yogavāśiṣṭha Rāmāyana*: edn. Nirṇayasagar Press, Bombay, 1938. Compare *utpatti prakaraṇa* Chapter on the origination that deals with the world of appearance as imagined by an average person having no reality. Again, *sthiti prakaraṇa* claims that whichever is perceived is but

consciousness of the mind only. While the *upaśama prakaraṇa* is closely similar to the ALS in experiencing consciousness in the complacent state, although the ALS establishes the Buddha's thesis of the impermanence and the self-naturelessness of the phenomenon.

20. ALS.III 1-2.

21. ALS. II. 161-168; II. 176-78.

22. ALS.VI. 1-2: 7-8. III. 121-122 project that the essence of the phenomenal consciousness is but thought-construction in which neither a grasper nor the grasped remain and thereby no scope of the grasping of consciousness occurs.

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3. *Buddhist Meditation*, Allen & Unwin, London 1956.
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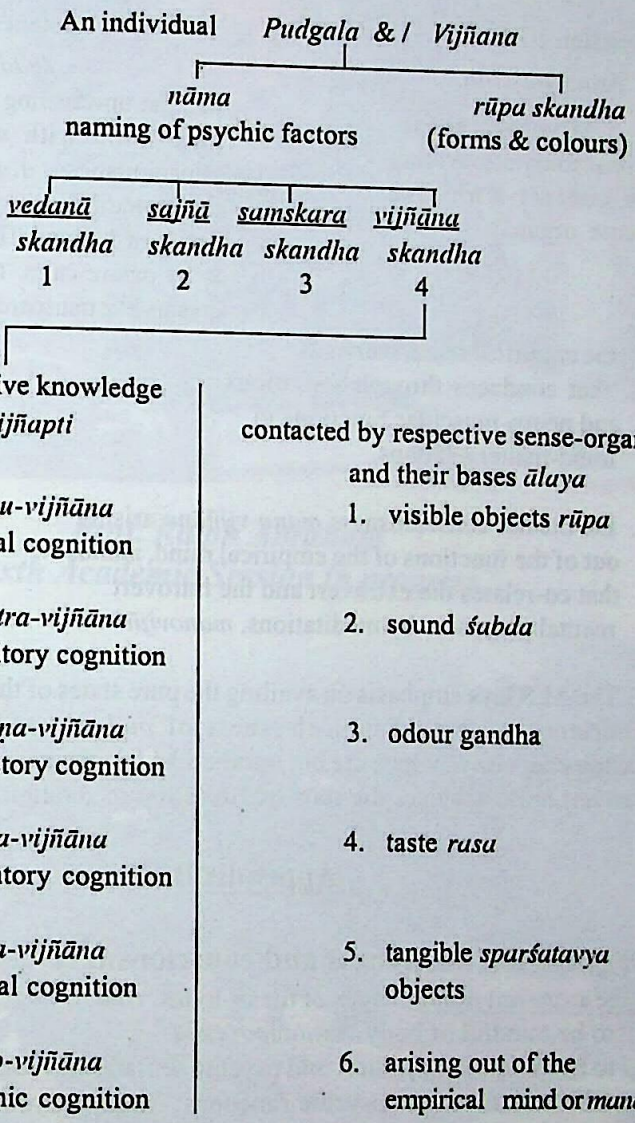
7. Suzuki Daisetz Teitara, *The Laṅkāvatāra Sūtra: A Mahayana Text*, Routledge, London 1932.
8. *Studies in the Laṅkāvatāra sūtra*, London 1938.
9. *Yogavāśiṣṭha Rāmāyana*, ed. Nirṇayasāgara Press, Mumbai 1935.

Appendix A


An individual Pudgala & / Vijñana
nāma
naming of psychic factors
rūpa skandha
(forms & colours)
vedanā skandha 1
sajñā skandha 2
samskara skandha 3
vijñāna skandha 4
cognitive knowledge
prativijñapti
contacted by respective sense-organs and their bases ālaya
1. cakṣu-vijñāna visual cognition
1. visible objects rūpa
2. shrotra-vijñāna auditory cognition
2. sound śabda
3. ghraṇa-vijñāna olfactory cognition
3. odour gandha
4. svāda-vijñāna gustatory cognition
4. taste rasa
5. kāya-vijñāna tactual cognition
5. tangible sparśatavya objects
6. mano-vijñāna psychic cognition
6. arising out of the empirical mind or manas

Eight kinds of consciousness in the Ārya Laṅkāvatara sūtra

The mind (*citta*)

function state *pravṛitta-citta*	potent state *śuddha-citta*
1-5. fivefold sense-consciousness arising in contact with five sense-organs.	i.e., the unwavering state of the pure mind with wholesome consciousness, *alayavijñana*, the tranquil psyche in the self-nature of the mind. The pure mind is by nature calm, tranquil and crystal-like transparent.

6. the empirical mind, *manas* that conduces through sensations and neuro-muscular functions in mind-matter relations.

7. the mental consciousness *mano-vijñāna* arising out of the functions of the empirical mind, *manas* that co-relates the extrovert and the introvert mental processes by meditations, *manovijñāna*.

The ALS lays emphasis on availing the pure states of the mind by the experience of the substancelessness of *pudgala* and that of the phenomena, *viṣaya* which are but mirage-like in appearance, thereby the introvert mind achieves the state of *Tāthāgata* meditation.

Appendix B

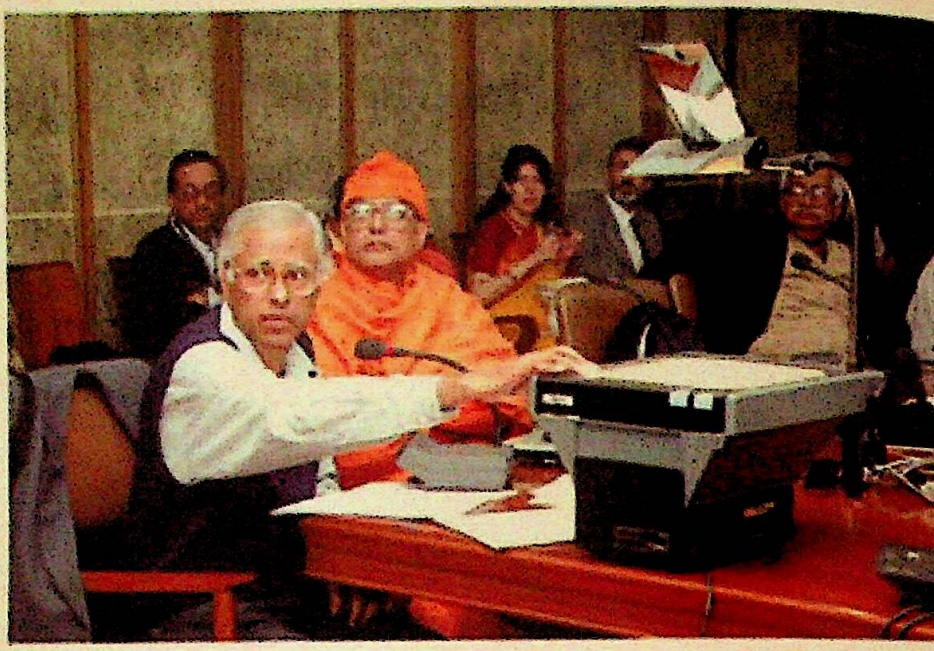
Stages of the awareness and consciousness

In the extrovert mind: Stages of the in-looks, *vipaśyanā*:

1. to be mindful of body: *kāyānupaśyanā*
2. to be mindful of physical and psychic sensations: *vedanānupaśyanā*
3. to be mindful of the psychic functions: *cittānupaśyanā*
4. to be mindful of the phenomenal objects: *dharmānupaśyanā*. That refers to both subtle potent matter-stuff and gross objective matter-stuff *sūkṣma bhūtadīni sthūlabhūtadīni ca*. The former refers to *ākaśa* space, *vayu* air, *tejas* heat, *ap* water and *phrithvī* soil (earth). The latter counts multiple atoms *paramāṇu* objective matter-staff in forms, colours, etc.

Prof. Ralph Abraham
Sixth Academic Session in progress

Audience watching a business session



Prof. N. Mukunda
Ninth Academic Session in progress

Participants in a business session

Inaugural Session in progress

First Academic Session in progress

Prof. Jonathan Shear

▲

Fourth Academic Session in progress

▼

Prof. Nilanjana Sanyal

B. Threshold to the introversion

1. The discrimination continues in the extrovert state functioning by the sense-organs in the mind in the course of progressing towards the threshold of the introvert mind, *savitarka-savicāra dhyāna* to begin how to concentrate.

2. The stage of no-discrimitation towards concentration, *avitarka-avicāra dhyānas*.

3. To meditate upto the wide extension of the infinite space when the individual consciousness in the concentrated mind experiences a pleasant state of its own *akaśānāyatana dhyāna.*

4. To experience the wide extension of the consciousness belonging to all sentient beings belonging to three spheres, namely, the spheres of desire *kāmāvacaraloka* that of the forms and colours *rūpāvacaraloka* and that of no-form *arūpāvacaraloka*, that is meditating on *vijñānānantāyatana dhyāna.*

C. In the higher state of the introvert mind, the individual consciousness leads:

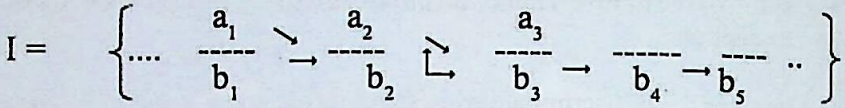
1. To meditate further with no objective manifestations as mirage-like appearance for the essencelessness of the constituted entities, *akincanāyatana dhyāna.*

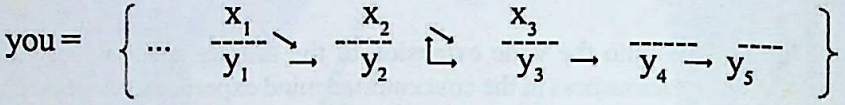
2. In advancing further, the meditator enters into a meditative stage of the non-dual one-pointedness *samādhi* and their external somatic manifestation appears in unconsciousness state, *naiva-sajñā-nasajñā.*

In the process of advancement of the consciousness all these are determinative to avail concentrated state of mental equanimity prior to interversion.

The ALS mentions them as the objective course of meditator unless the egolessness of the individual *pudgala-nairātmā* and the constituentlessness, *dharmanairātmryā* of phenomena are experienced in the introvert mind. Despite that, the consciousness of the practitioner concerned remains dependent. That requires further concentration of the meditative mind for the awareness essencelessness, *śūnyatā samādhi*. In order to experience *śūnyatā samādhi*, the concentration on essencelessness itself, the introvert mind explores 'thatness', which holds no substratum to support, to discriminate. And, no speech be articulated to state what it is. That is the innateness, *sahaja* as the *siddhācaryas* prescribe to experience.

Appendix C





a_1, a_2, a_3
x_1, x_2, x_3 } for *pravrttivijñanas* or mental states of I and you respectively

b_1, b_2, b_3
y_1, y_2, y_3 } for *ālayavijñānas* (undercurrents) of I and you respectively

b4, b5 ... for the liberated state of I
y4, y5 ... for the liberated state of you

{ } for ordered set

↘ for upakarí (Dencfactor) relation

→ for causal link

↑ for causal link

What is Consciousness ?

ARABINDA BASU

Respected Swami Prabhanandaji, esteemed Prof. Chakrabarti, and my learned fellow seminarians — that I should take part in this seminar was decided upon only towards the end of the previous week. A telephonic conversation between Swamiji and myself sealed my fate. There is a little misprint in the programme. There should be an interrogation mark (?) at the end of the title. It is not — 'What is consciousness' but 'What is consciousness?' It is a question. Is it not a little intimidating to say the last word at the end of this wonderful seminar? But fortunately, I do not have a last word. I do not have any word of wisdom or unwisdom to deliver. So, my talk is only going to be consisting of a set of questions which, I think, are somehow related to the problem of consciousness.

In his letter, respected Swamiji mentioned two categories of people who were going to take part in this seminar, experientialists and experimenters. I suppose, people who belong to the first category are those who are practising some kind of discipline having experiences which are perhaps rather unusual. By the experimenters, I think, he meant people who are working in the field of natural sciences. Could these two kinds of people come together, at least, to discuss fruitfully the problem of consciousness?

The facts that I am going to relate are concerned with a particular man whom I will refer to as 'X', because though he practises a certain kind of discipline and has some experiences, does not want to reveal his identity. So, we will go on referring to him as 'X'.

First, what is happening for years together is that he decidedly sees the image or face of persons, about whom he has not

thought of for a long time. Immediately after that sort of an experience, either he gets a letter from that person or even more concretely, the man or the woman materializes at his doorstep. How does he see the face or image of the person? How does he get such kind of communication? This is a problem for the scientists to investigate.

Secondly, this is a little more unusual. 'X' has knowledge of many kinds of things, even of things happening in New York or Barcelona. He gets communication and describes the events as seen in a cinema-show. He sees the events vividly. This has happened so many times that he himself is at times puzzled and thinks that he is going off his head!

I remember, in this connection, Sri Ramakrishna's great saying. He says, 'I am behead!' How can anybody who always concentrates on consciousness be behead? This person who has some kind of consciousness, goes on seeing things, which actually happen very often, at places very far from where he sees. For last two years, another thing is happening to him. He acquires knowledge of things, of people and events without thinking about them at all, without having interest in them. Knowledge comes spontaneously and it always seems to be valid.

For last two years, a young woman about 40 years old, having husband and two children, comes to him. Whenever she comes, 'X' asks her, 'Anything to report?' The lady says, 'No, I cannot remember anything.' He would say, 'Well, what about Friday afternoon?' 'Oh! Something happened! Yes! I was sitting there doing nothing. Suddenly my mind went off. My mind was not functioning at all.', the lady would reply. 'X' would ask her why she did not tell him about that. 'Well! It didn't occur to me to be something unusual.', she would say. Now, it is happening with the woman over and over again. Whenever the lady comes to report something to him, it is found that he already knows about it. Now, do these kinds of things have to do anything with consciousness or not? The word 'consciousness' is not used in the same sense always. Even in this conference, there have been

so many different ideas regarding consciousness. There is one paper 'Consciousness of Self'. Vedanta says, consciousness is the self and it is not consciousness of the self. For the particular paper, consciousness and self are different things and he is right from his point of view. On the other hand, there may not be self at all. Our Buddhist friend tells that, if there is no self, there is only consciousness. My friend, Prof. Mukhopadhyaya said that there is transcendental consciousness that has nothing to do with temporal flux of movement. He meant that there is a certain difference between the transcendental and the mundane. But, there is transcendental consciousness as vitality, as dynamism and that force or energy becomes the flow of movement, every moment.

He talked about momentary consciousness. Can there be a momentary consciousness at all? The Buddhist says that before the *samskara* has come to be, it has already gone. Where is consciousness? On the other hand, that Buddhist is quite correct from his point of view. There is a flow of *samskaras*. Where is the flow? It is just a flux. How can I relate consciousness with this kind of phenomenon? This is a question I am putting. I am not giving any answers for the simple reason that I do not know the answers.

Are brain and mind the same thing? Nervous reaction, brain activity and mind, are they two different things? Is mind the general term for the collection of brain activities and nervous activities? Are mind and consciousness the same? If they are, how does consciousness studies the mind? How can there be a science called Epistemology as a branch of Philosophy which studies mind? Does the mind study the mind itself? These are questions which are very important for me, both as a student of Philosophy and as a student of Psychology. It has always been said that the mind cannot know itself. If it does not know itself, how does anybody know how the mind functions? Does mind itself know it? Something other than the mind knows it. So, these are the questions that I am raising in the hope that some answers would be given by my scientist friends.

I am going back to the person 'X'. There are other things also happening to him, which perhaps he does not want to be publicized. It is a fact that his mind goes completely silent, absolutely silent. Patanjali has described that as *chittavrittinirodhah*, no thoughts, no feelings, no emotions, no connection, no will, nothing. Yet, he becomes more keenly conscious. Everytime the mind goes silent. This perhaps shows that the mind is something else, other than what studies the mind and that even if it becomes silent, it continues to exist. Its business of continuing to be a persistent something brings us to the *Vedantic* idea of the '*chit*.'

As I said, there is an unanimity of views, with regard to consciousness. But, I am using the word to indicate what '*chit*' stands for the *Vedanta*. By '*Vedanta*' I mean the *Upanisads*, not the schools of *Vedanta*, where in fact, there is certainly animity of views with regard to what *chit* is in itself, self-existent, self-luminous, self-evident.

Consciousness is its own cause. Consciousness is of itself and everything else. Not only that, there is also a dynamism in it, force, energy —*Sarvam abhavat bhavati bhuh*—all is in a state of becoming. It is been, become, what has become. If there is anything becoming, it must be being. Heraclitus says, the world is a flux and you can never jump in the same river twice, or the universal fire. That universal fire is the reality which flows. This is a philosophical problem relating being and becoming. Consciousness is a status, consciousness is a movement.

With regard to the question of the supramundane consciousness and the mundane flow of things, can there be relation at all? Let us remember one *mantra* of the *Upanisad*. I give the English translation first, if I can remember the *mantra* I will recite it. I may not remember it. 'There the sun shines not, the moon and the stars have lost their lustre. This is a flash of lightning. What to speak of Agni? Because that shines, everything shines after that (anubhati). For the light of that, everything is lighted up.

Na tatra suryo bhati, na chandratarakam
Neyam vidyoto bhanti kutoyamagnih.

Tameva bhantam anubhati sarvam
Tasya bhasa sarvamidam bibhati.

The word *bha* is used in both cases. That is the original '*bha*', '*chit*', '*prakasha*'. In this light everything shines – *bibhati* is used. So, there are certain things common. There is a bridge which brings together and links together being and becoming, the one and the all. That is, Brahman alone.

DISCUSSIONS

DISCUSSION ON THE PAPER OF SAMDHONG RINPOCHE

Title: *Consciousness: A Deeper Scientific search*

Coordinator: *Prof Jonathan Shear*

Prof Radharaman Chakrabarti: Can we start with a very rudimentary issue? I was wondering especially about the relationship between the body, which is perishable and consciousness. We are told by His Holiness that the body is owned by *jnanas*, controlled by *jnanas*. Now, when someone approaches the state of enlightenment, as you said, through various stages, what kind of relationship would develop — or would there be no relationship at all — between this mundane body of ours and different stages of consciousness?

Prof Samdhong Rinpoche: I am afraid that I have not very clearly understood your question. Body and mind, or consciousness, are bound together by the bondage of mental defilements and their actions, *karma* and *klesha*. So, at this moment, we do not have the freedom to take or to leave the body. It is always controlled by external forces. Those may not be entirely external, but there may be other forces of past *karma* and the *klesha*. When you get rid of the bondage of *karma* and *klesha*, the mundane body to be there, will not be a vehicle of consciousness. Consciousness is free to take any vehicle, form or body at its will, thereby it will have birth according to its wishes, or *icchajanma*; and also will leave the body whenever it wishes, or *icchamrityu*. And, in between also, it can leave the body, enter into another body and so forth. This practice, or *parakāyā pravesha*, has been very common in ancient India and ancient Tibet.

At this moment, the body is a vehicle and we are bound to it by our past *karmic* force. Unless the *karmic* force is eradicated, we shall have to remain in that bondage from this body to another body and so on. So, the cycle between birth and death means you are bound to that circle. When you get rid of that bondage, the consciousness is no more dependent upon the vehicle of the physical body. It can have a different kind of vehicle and can also use physical vehicles for the sake of others. Unless you take a physical form, you may not be able to communicate or connect with mundane people, unenlightened people. Therefore, enlightened people also take the vehicle of a body, but they are not in bondage to that body. They need not carry that body unwillingly. Whenever they will, they can give it up.

Swami Prabhananda: What is the method of concentration that you have adopted in your spiritual life?

Prof Samdhong Rinpoche: The Buddhist practice for achieving concentration is quite simple. We begin with *shamath* and then switch to *vipassana*, or the other way round also. *Shamath* means to train the mind to concentrate on one object, one *avalambi*. You may take one material object and try to concentrate the whole mind on that object, and at that time there may be mainly two obstacles. The first is losing the object due to various chattering thoughts, which we call *uddhata, prabhashi-shad, (udat)*. *Uddhata* means the mind becomes very rude and aggressive, thus it is not able to concentrate on the object. It is only through practice, without shortcuts, that one has to take the mind back to that object.

After five or six months, the regular practitioner, who does nothing but meditation only, begins to achieve a power to concentrate on one object for a few minutes. Then, another obstacle comes — the mind tends to sink and loses clarity and sharpness. This is dangerous, because many people think they are achieving concentration. But, that is not so. If they let it go several times, they may not be able to regain concentration. That needs to be watched very carefully. We call these two — *smriti* and

samprajnana. They are like watchdogs — awareness and alertness — watching the concentration. When the mind begins to sink, concentration needs to be re-alerted and re-vitalized. In these two ways, we will gain the power of concentration. And, if we are able to concentrate our mind without any disturbance for three hours at a stretch, then it is capable of achieving *shamath*. When real *shamath* is achieved, there is a special kind of bodily sensation. Both body and mind are able to work for twenty-four hours without feeling tired. The combination of the mind and the body, *ananda* and *sukha*, is *shamath*. Then the mind can be employed for anything. After achieving *shamath*, one goes to the second stage of analytical meditation. At this stage, the concentration is not on one object, one analyzes things and thinks about many things without any mental disturbance or chattering. One can concentrate on one particular thing that needs to be analysed rationally or experimentally or in any other way. In this way one searches the reality of *shunyata* or *anityata*. Most of the meditative methods of the old Indian Yoga traditions are very similar to this. The only difference is whether one is doing *vipassana* on *anityata*, on *nityata*, *shunyata* or the solidness. These may differ, otherwise the methods are almost the same.

Prof Nilanjana Sanyal: Professor, you said that consciousness produces different types of consciousness. First, did you mean only inner and outer consciousness, or different types of sensory processes leading to different types of consciousness? Second, you said external consciousness is based on *shrutiprajna*. To us psychologists, this *prajna* or knowledge is something based on perception and intelligence-oriented storage of information. Where do you think is the role of feeling, in understanding this consciousness?

Prof Samdhong Rinpoche: I said consciousness creates many other types of consciousness. I was talking about the six different types of consciousness which a normal human body can create. The *manovijnana*, the inner-consciousness, which does not depend on a physical organ, is the real thing. That is the source of

all other types of consciousness. The other types of consciousness depend on physical organs, like eye, ear and nose. Through those, we have five different material things that have the possibility or potential, to touch our physical organs. The eye organ takes the picture of the shape, the form; the ear organ hears the sound; the nose organ smells, and at that moment due to the *manovijnana*, the inner consciousness, you are able to create a seeing consciousness, a hearing consciousness, a smelling consciousness, a tasting consciousness, corresponding to the action of the organ. That is only a perception, and thereafter the thoughts come; your eye organ perceives the white colour but the eye consciousness does not see white or blue or anything, it only sees the white as it is. But, that picture goes into the thought process, and becomes a *samanya*, imagination. With that imagination, the thought process always perpetuates the illusion: I have seen a white object, it was beautiful, the name is so and so and it is used for this and that. That is all in an imaginary world. It does not have any direct contact with the real object. The thought process is also a product of that consciousness. If there is no consciousness, the thought process will not be there either. The *vijnana* creates the process of thought. They are not able to remain in the present. They always go to the past or to the future. These five different types of sensory consciousness are created by the inner consciousness or *manas*. The *manas* or inner consciousness is not dependent on the physical organs, so it can go from one body to the other, and it is still workable and can perceive things without any body.

The answer to the second question is: feeling is one of the components of everyone, of every individual embodiment. We talk about the five aggregates, or *skandhas*. Feeling is one of the aggregates, without which the individual or person may not be able to function properly. It is a part of consciousness. When consciousness touches an object, it results in a feeling which cannot be avoided. Feeling is instrumental both in the process of thought and in the continuity of *vijnana*. Actually, the eye organ and the colour or form come together. First, the feeling, *samvedana* is

created, and that feeling stimulates consciousness. The picture coming to the organ is perceived by consciousness, due to that feeling. If there is no feeling, it may not be able to attract consciousness to pay attention. So, feeling is instrumental in attracting the attention of consciousness.

Prof P.K. Mukhopadhyay: I have a lot of things to say, but I want to concentrate simply on the method of meditation and its goal. There is a difference between the perspective of a *yoga* aspirant and that of a realized *yogi*. It is only a realized *yogi* who can say what is actually the state which a *yoga* aspirant is trying to achieve through a certain method. There are different methods. One is: all of a sudden, a particular *yoga* aspirant, through the grace of his *guru* due to his past *karma* or any other reason, without much conscious effort, at a certain stage can have an experience, which otherwise can be achieved only through a long, long practice of *yoga*. That occasionally happens. It has been explained in our tradition in different ways. Sometimes such an experience comes just once in one's life — and is never repeated; sometimes it goes on repeating itself.

You rightly said that when *yoga* aspirants begin to concentrate, almost each of them faces two dangers. First, it is very difficult to control the mind and to concentrate. The second one is delusion. Sometimes a *yoga* aspirant thinks that he *has* been able to concentrate, when actually he is sleeping. The reason is that, in our ordinary state, we are used to thinking on some subject. Subject-less thinking is not possible. So, the moment we withdraw ourselves from the *alamban*, we are taken for asleep, physically asleep, I mean; whereas *yoga* is a state where the more you are physically asleep and dead, the more you are consciously alive. So, this state is to be achieved. Complete clarity of thinking, complete alertness, and at the same time minimum bodily activity are to be achieved. And, this creates many problems for the scientific investigation of the state of consciousness. For, the state of consciousness to clearly manifest,

the bodily functions are at a minimum. So, correspondences become a little difficult.

But my point is this, even at that stage, when one has almost transcended all the different ordinary types of consciousness, and has been able to be posted in *manovijnana*, even at that stage which you refer to as inner consciousness, do we still have the sense of innerness, or is the innerness-sense also lost? So, at that stage, is consciousness felt or should it be felt, according to tradition, as the inner individuated 'my consciousness', capable of being referred to as 'aham'? Or, is that consciousness merged into the universal consciousness, and there is no sense of innerness that has got to be transcended also? In the *Advaita* tradition, the innerness should not be there, as you said the Buddhist also agree to it, that only the inner consciousness is there, no outside object is there. If I have heard you correctly, you seem to suggest that even at that stage, there is still the sense of innerness, oneness. This is completely contrary to what most of the traditions hold, and what our experiences tell us. What is that state?

Prof Samdhong Rinpoche: Sir, we are talking through language and therefore, we have to use some words, and also in the effort of communicating or differentiating something from the other, we use certain words. But 'inner consciousness' is not a good word, I do understand. *Manovijnana*, *mana*, does not refer to inner or outer. It is not a sensory consciousness; it is just a consciousness consciousness. I called it inner consciousness just for the benefit of communicating or to differentiate it from sensory consciousness. I do not know what the exact English expression should be. Actually, there are no inner or outer differences. Whenever we talk, we have to use words, and all words are products of thought, and thought is always fragmented or used in the alternatives. Whatever word we use, we cannot properly describe the thing we are referring to. The Buddha said that since the time of his attainment of the Buddhahood until his passing away, *mahaparinirvana*, he had not spoken a word, although he was teaching consistently. That means he never used the thought process. The ending of all

thought process—*kalpana* and *vikalpana*—is one of the objects of meditation. When we achieve that power of consciousness, we put an end to all alternatives—the mind which is dependent on alternatives and particularities comes to an end. But still, we have to use these words—wholeness, transcendent and so forth. We use 'wholeness' because we are short of expressions. 'Wholeness' is always used as an alternative to fragmentation or partly-ness, something that is not complete in itself. Many people use the popular expression, "Truth is one", "God is one" and so on. "God is one" is used as compared to two or more. It is just an alternative to many or to two—to something that is not complete in itself. If there is no conception of two or three or many, then you cannot conceive of one, either. So, with wholeness also we conceive an alternative to partial-ness, or fragmentation. It always goes with *apahara*. That is our limitation, so we have to remain in that. But, through these fragmented words, we are trying to refer to something which is *kalpanatita* or *shabdatita*. When your mind reaches that stage, beyond alternatives and fragmentation, both thoughts and words become unnecessary. They are not capable of expressing the thing.

Prof Anjali Mookerjee: Prof. Rinpoche, your commentary began with your saying that science cannot touch consciousness. I feel the same way. Well, here *vijnana*, that is, science, in Sanskrit it will be *vishesha vijnana*, is a special way of looking at things. Just as religion and *dharma* have two different meanings. Religion, in English, includes many more things than *dharma* as we see it.

You said that a person can have continuity through *chitta*, or *manas*, and that a dead person can have continuity through mind and the mind goes on from one birth to another birth. I think, soul is not thought of in Buddhism as such. What happens to the soul or *atma* in migration, if rebirth is taken due to *karmic* conditions also? What is the difference between this soul as we think of it in the *Upanishadic* or *Vedic* or Hindu system, and the mind?

Prof Samdhong Rinpoche: I do not think there is any difference between the Buddhist concept of *manovijnana* of a person and

the concept of '*atman*' in the non-Buddhist Indian tradition. In reality, there should not be any difference, but the differences are huge when we define them through words. And, there is something which goes continuously, which comes beginninglessly and goes endlessly until enlightenment. And, even after enlightenment, it remains there. The Buddhists try to say that this is not static, not unchangeable, but it is coming through each moment, changing; each moment it is decaying; each moment it is reborn, and thus it is impermanent, transitory and temporary — *kshanika* — but the *Ātmavadins* say that it is always unchangeable, static, and what is now, is the same even after thousands of years. There is no possibility of changing the *atma*. I think, these are the differences of expression, and the *manovijnana* or *alayavijnana*, will continue having the same individuality until *Nirvana*, or enlightenment. This is accepted by the Buddhist view. But, Buddhists tend to say that it is not *ātma* because it is transitory; the qualification of *ātma* should be unchangeability, or *nityata*. *Nitya* or *anitya*—this is the difference. Otherwise, continuity is not challenged by anyone.

Prof Jonathan Shear: Just to clarify, would you be saying that, phenomenologically, there is no difference in terms of real experience, but in terms of a postulation, ontologically?

Prof Samdhong Rinpoche: I think so. Yes! Yes.

Prof Suniti Kumar Pathak: Apart from the abstract meditation, Tibetan Buddhism has a lot of complex rituals, particularly the *Kalachakra* and all that. We would very much like to be enlightened by you about the significance of this.

Prof Samdhong Rinpoche: Rituals are useful for many individuals, but rituals are not indispensable in practising any *dharma* or *sadhana*. The *manasika sadhana* can alone go all the way through to enlightenment. Firstly, rituals assist the weaker minds of individuals who are helped and benefited by the performance of rituals. It is a kind of *avalambana*. Secondly, ritual is a socialization of an *adhyatamika sadhana*. *Adhyatamika*

sadhana is done by an individual who is not able to share or do anything in congregation. When you have to do things in a congregation, or to share something with others, you have some kind of dependency on verbalization, prayer or chanting, making *mudras* or other objects or *mandalas*. All these things are the expressions of inner or mental beauty. These are also the cultural expressions. This sort of socialization of rituals was very much developed in the ancient Indian traditions. We cannot deny the importance of rituals. They serve to bond people together, to institutionalize whatever they deal with, and provide something for the community or congregation to do together and share. This is why I think that every religious tradition does have some kind of ritual. As I said, rituals are not an indispensable part of *dharma*; you can dispense with them, but they are useful.

The *Kalachakra tantra* is very elaborate, and has to do with the essence of Time — what it is and how it moves, how to define and calculate it, and finally, how to end or eliminate it. The *Kalachakra tantra* deals with three aspects of itself: the outer, the inner and the other.

The outer *Kalachakra tantra* is all about *jyotish*, astronomy and astrology, *khagola-vidya* — how this earth revolves along with all the other planets, and how to calculate the year and the month and the movement of every small planet around it. That is pure *Jyotish*. The measurement of time is based on the movement of the earth and the other planets. It is about how they move and what defines the year and the month and the dates and so on.

The inner *Kalachakra tantra* has to do with the movement of the human body from birth until death, how it functions and how its cycles change according to the planets, and how it is conceived, how it grows, gets old, decays and then dies. This is the cycle of bondage of the unenlightened human body, which is elaborately described.

The other *Kalachakra tantra* deals with the transmigration of the mind from ignorance to enlightenment, what are the methods and how the physical universe and physical body can be utilized

for the enlightenment of the mind. Time is one of the biggest or the most important subjects of discussion in the ancient Indian philosophical traditions, therefore, the Buddha provided an exclusive and detailed *tantra* teaching, dealing extensively with the conception or perception of Time.

Prof Anjali Mookerjee: In this context, I want to say:
"Ayurnashyati pashyatam pratidinam yati kshayam yauvanam
Pratyayanti punarna divasah kalojagatbhakshakah
Lakshmistoyaya tarangabhangachapala vidyuchchalam jivitam
Tasmanmam sharanagatostvam raksharakshadhuna."

Prof Samdhong Rinpoche: Thank you.

MM Dr GG Mukhopadhyaya: Through your illuminating talk you have made the concept of Buddhism so clear. Still we are very much tempted to hear from your holy lips about your actual realization of these concepts in your own life of long *sadhana*, because, as you know, *Shankara* also says, It ends in *anubhava – anubhavavasanatyat bhutavastuvishyatvat brahmajanati.* With that, I have another question to ask you: Is it possible, while in this body to have full realisation, because many people think that the body is an impediment. Unless you are free from your body, you cannot have full realisation. We are very keen to hear about that, based on your own inner *experience*, and not only about your concepts, precepts or perceptions of these things.

Prof Samdhong Rinpoche: I am sorry, sir. I do not have any *anubhava*, or experience, and I have not been a practitioner for a long time. Of course, I became a Buddhist monk in childhood and then I began regular training. But, unfortunately, at the age of 20, I had to come away from Tibet and take refuge in India. Thereafter, we were engaged mostly in social and community work, and had very little time for *sadhana* or meditation. So, I do not have any experience to share with you. As I mentioned at the beginning, whatever I am talking about is from a very preliminary

knowledge of *shruti* (hearing) *shrutimayaprajna*. It is not my own *jnana* (knowledge), but borrowed from the *shāstras* and teachers. So, whatever the *shāstras* say and the teachers told us, I am sharing with you, but in a very primitive way.

Whether a person can be free or enlightened without giving up the physical body, remaining in the body, has to be dealt with at two levels. What is meant by 'within the body'? As I mentioned, *karmic* force gives us our body and we are not able to give it up by our own will or wish. The end will come of its own accord, and we are not free to take or give up the body at any given moment. We get separated from the physical body when actual death occurs in the ordinary sense. Until then, we have no freedom or power to separate ourselves from the body. We have to carry it.

Regarding the second question, for freedom from the body, one need not wait till natural death comes. One can be enlightened and be freed from the body within one's lifetime. In that case, one is freed from the body but can still work with it. It can be carried on or given up at will. At that stage, the body is no longer a burden, but becomes an instrument. So, bondage to the body *is* a hindrance to enlightenment, but the body *per se* is not a hindrance to enlightenment. This is my interpretation.

An audience: Prof. Rinpoche, I am coming back to your initial question: can consciousness be scientifically searched? Now, you have indicated already that the inner consciousness produces sensory consciousness. In the domain of science, we find that not all hypotheses or conjectures of theories come out from material evidence, or experiment, or verification. Sometimes they come much later. Sometimes, these sorts of conjectures of theories come out from inner conviction. I give two big examples. One is Copernicus' concept of a heliocentric universe, which was verified experimentally much later by Galileo. But, during Copernicus' time, it was with his inner conviction that he came out with this concept. The second example is — Albert Einstein's concept of relativity. That was verified much later — two decades later. But when he came out with his concept of relative time, it was from his inner

conviction. And, the third one, which is opposite to this, is that — Einstein did not believe in the Principle of Uncertainty. He said: I do not believe that God plays dice with this universe. Though he did not have any experimental verification at hand, he firmly believed that all forces of Nature can be unified into one and only one law of Nature. And, he pursued that belief throughout his life. Still now, scientists are searching for that unified force of Nature. They call it "The Theory of Everything" (TOE), but it is still eluding them. They have not found it as yet.

My point is that, in the domain of science also, there is one part that comes out from inner conviction, which may or may not be experimentally verified later, but sometimes comes up like that. So, coming back to your explanation, my question is: Do you think this inner consciousness, which is not materialistic right now, can one day have some kind of materialistic manifestation through biological phenomena, through neurology or microbiology, genetics, that sort of things, any kind of body functions which are not yet explained? Would it happen in the future? Is there any possibility? What do you think?

Prof Samdhong Rinpoche: Thank you very much for the valuable comments. They are useful to me. I have very, very little knowledge about science, and still I know that many scientific researches start from just a hypothesis which comes out of inner conviction or just imagination, and is later verified and which establishes some theories or findings that are constantly changing. These findings again are corrected by other findings, and this goes on and on. How we define 'scientific search' depends on whether we have already concluded that consciousness can be scientifically searched or not. If you define the word 'scientific' very broadly, all kinds of reasons and rationales are considered scientific. Then, of course, consciousness can also be searched through a scientific method. For that matter, within the definition of 'scientific', you must admit that spiritualization of mind is also scientifically acceptable. Then everything can be done through scientific research or search.

Regarding the second question, I do not think that the process of development of scientific research which exists today will ever be able to find consciousness as it is. It may be neurological, genetic or anything. All these are dealing exclusively with the visible physical body. And, the visible physical body is neither a part of consciousness nor it is indispensable for consciousness. Consciousness does not reside in the visible physical body structure. You may do an enormous amount of research on the function of the brain or neurological research, but the brain deals only with thought. The thought processes depend on the functioning of the brain, but perception does not depend on the brain or genetic system.

Unless your mind is transformed, I very much doubt that we could say that consciousness can be searched through scientific methodology or in a scientific way, based on the concept of transformation of the mind as accepted by scientific people today. Unless your instrument is improved, you will find anything and everything within the limitation of your unenlightened mind and your instrument of the conditioned physical body. Until now, whatever scientists are trying to find or establish is through their ordinary senses, ordinary minds and ordinary instruments. Their scientific search ends at that point up to which their ordinary instruments and ordinary sensory mind can perceive or see. The scientific search cannot go beyond that point. For them to be able to go beyond that, they have to accept that our ordinary mind and instruments are limited, and we have to go beyond this limitation. To go beyond this limitation, spirituality needs to be accepted. And, if you accept spirituality, I do not know whether you will remain a scientist or not (laughs). That is very questionable. You might have read in the newspapers that an organization of neurologists invited His Holiness, the Dalai Lama to speak before a huge number of scientists, and there was opposition by a group of scientists saying, how can a spiritual leader be invited to talk with scientists and how their scientific aura or temperament will be damaged. If you accept that kind of thinking as scientific, then I do not think that consciousness will ever be found from a scientific search.

Prof Jonathan Shear: I have a question here because this is a topic I am very much interested in, but I have to take the liberty of making a little comment about this controversy among the neurological society. One of the people that His Holiness talks about here has written a book called 'The Pauper'. I happen to have studied with him forty years ago. Many scientists, the majority of top scientists, would hold that science is methodology, not doctrine. Their notion, relating to His Holiness, the Dalai Lama making suggestions, is unscientific. I think, those objectors are not doing good science in raising objections, actually. I have a practical question regarding science.

It seems to me that we do have a good instrument, to evaluate spiritual matters and enlightenment, the human nervous system. That is actually an instrument. If we accept that any experience we have in the mundane body or experienced by an enlightened person is reflected upon the nervous system, then I am very much interested in finding ways to use this instrument usefully and evaluate it by scientific means, scientific methods. One of the things that any scientist would want to do is to recognise it and take it seriously. You have to find the instrument. This is done in meditation procedures in different traditions. If we look at the results of such instruments, it becomes difficult to distinguish what experiences are due to the idiosyncrasies of that particular tradition rather than the instrument of the body itself. So, it is very useful to be able to use cross-traditional studies, where adepts from different traditions participate in the given experiments. Some basic experiments have been done on the physiological level for evaluation of the experience and pure consciousness, emptiness. The scientists have found that breath does stop completely. It was a big surprise and very interesting to scientists. And, many traditions do say that you do not breathe in that particular experience.

Common sense traditions all over the world generally hold that we can look at the mind having no pure consciousness, but the mind has different layers of consciousness – the surface layer and the deeper internal layers. The deeper layers would be of

discursive thinking and of all the thoughts. Most of the traditions say that one has the intellect, which can discriminate between different thoughts. The meditation traditions would say that there are two or three further layers. They are forgetting the questions of ontology, that the instrument is having the experience, then there are some deep levels of *ananda*, *shunyata,* emptiness, where thought stops. I have not seen it in my small knowledge of Tibetan traditions. So, the first question is about the sensible layering within the Tibetan tradition. If it is experimented then it could be done usefully, some kind of physiological research, brain research, on adepts who could have that kind of steadfast concentration you describe, and sit at the level of discursive thinking. Sit, just at the level of intellect, without even words. Sit just at the level of '*asmi*', ego, sit at the level of pure consciousness. The question is, from your knowledge within your own tradition, of your own style of Buddhist practices, are there people who could sit at a given level? If they could do that, and people from other traditions too, and if we could find physiological correlates that are common between different traditions of people sitting at these different levels, then you may see many scientists starting to shake their heads. Then we would have some way of corroborating, or establishing the validity of this kind of instrument to begin to explore layers of mind, not in the short term to enhance enlightenment, but I think, in the long term too, because this kind of research would really begin to alert the world of science, which is moving collective thought on the planet, to say: Oh! these are really authentic instruments for exploration, not just ways of a sort of self-experienced meditators. If some serious researches were done with people from the Taoist tradition, from *Yoga* tradition, from *Vedanta* tradition, from many other traditions, who could come together and actually sit at a given level, and it may not have to be a long term – but for only twenty seconds at a given level, it would be enough to do enormous neuro-physiological work. And, if this kind of experiments could be done, we could say, 'Oh! look at all these

levels.' Then the world of science would know that these are reliable instruments. So, do you think that there are people who, first of all, *could* do this, and second of all, perhaps might be persuadable, even though it is a big sacrifice to do such things perhaps?

Prof Samdhong Rinpoche: You have said that there are different levels or states of mind according to different traditions and through practice one can reach various levels of attainment. If I understood it correctly, your question is: can these methods of different traditions be compared with each other? I would say, definitely, yes! This can definitely be compared, and if you do that comparison you will find absolutely the same thing. There will be no difference at the experiential level. But, they will not agree to that, because when they talk to each other they use different languages. Agreement in language is not important, if the agreement in experience is there. This has been very well-said by a Tibetan teacher who said that different traditions are there, so there are many differences also. If these are compared by an experienced *yogi* or *sadhaka*, there will be no difference. They will be the same. This is absolutely possible.

And, the second question deals with experimentation using scientific instruments. Until now, what I know is that, they are always measuring, observing only the physical behaviour. For example, a number of neurologists visited Dharamsala several times and went to the meditators in Kulu, Manali and other Himalayan places, and adjusted many instruments to their heads. The meditators' brain functions were recorded. In the deep meditative state, in the state of coming out of meditation, and in the state of going into meditation all functions were measured and the neurologists came up with many elaborate reports. All those reports were able to tell about the physical changes and behaviour only. They could not say that at that moment the mind was like that, what the mind was experiencing or seeing or feeling. They do not have any measurement for that.

Prof Jonathan Shear: The question is this, there are some researches done and other meditation techniques are there where people in meditation are asked: when you come out of that precise experience, just press the little button. Then they find very specific physiological correlates. Now, it is a separate question. How useful is the experience? I think actually, if we can do it then someone could say: oh! here I have come out of that level, just intellect, no thoughts, nothing, just the intellect, press the button. If you could have people who are so trained, that they could sit there, and you could tell them: I would like you to go to this. You would have people in their own tradition who would say — this is what he means. If they could do that, my belief is that — research that could be useful for the world, could be done.

Prof Samdhong Rinpoche: That research would be useful for the world, that I do not dispute. But, that is only a research of a physical body of that practitioner and it is not research of the consciousness of that practitioner. This is what I am referring to.

Prof Jonathan Shear: I absolutely agree with you. But, when you find and when you test the physical instrument, you find the same reports of people in different traditions. When their instruments are in a comparable state, they are reporting the same kind of experiences. This is a big step towards objectivity. This will fulfil much of the criteria that science has, for taking people seriously. Oh! when your nervous system is in this state, you have unbounded bliss. Then they will begin to think that one *can* really have unbounded bliss. Many people will think that way. So, that is the use of it to have some way of being objective, evaluating people's reports. I am very confident that there are many, many people who would then say that this is very important; this is very interesting. So, do you think if such research were set-up, this particular experiment, it might be possible to have good practitioners who could say: oh!, I will sit here, not just go in and go out to see what happens, but have this particular experience.

That was my exact question, because my small reading about the Tibetan practices suggests to me that we are more likely to find people who can do that, doing Tibetan *vipassana.* There are other meditation traditions, which do not always stop at this level. That is why I am particularly interested in your response from your own background.

Prof Samdhong Rinpoche: That kind of experiment is possible, I would say, and there can be certain similar results also. But, meditators who have reached a much higher stage can manipulate at their will the symptoms of the physical body in different ways. Therefore, a practitioner cannot satisfy whatever you have found in this condition of nervous or physical system, the person stays in this stage. That will not be a very accurate evaluation.

Prof Jonathan Shear: But again, any statement like that is susceptible to exactly this kind of testing. Somebody can say: oh! I can stay at this experience and move like this and that, and then look and see what is happening in the brain and what it is doing. So, in the world of science, one can only move one step at a time, and if such practitioners could come forth. I ask the scientists here, does this sound like an interesting sort of idea and approach?

An audience: Recently, I read in a paper that a group of Tibetan Lamas and also a group of nuns were given the same test and they found the same physiological changes at particular levels. They were trying to measure what happens physiologically at the highest point of feeling of that particular experience, and they found similar changes physiologically.

Prof Jonathan Shear: That is a particular one. But this one has a slightly different orientation.

An audience: May I interrupt, Sir. I think, the experiment mentioned will have its advantages, in a sense. It is true, we would not be able to go to deep consciousness, experimental consciousness, as you would say, but can go to the manifestation of consciousness, at least. If we get inputs from all these different sources, even with a number of limitations, may be, there will be

exceptions as well as limitations too, but we may be able to arrive at some sort of understanding. That is my feeling.

Prof Jonathan Shear: Practitioners may feel that having the experience is better than having this kind of understanding. I personally would agree to it. But, one could say — we are not necessarily doing it to have a superior understanding than you already have. We are doing it to translate what may seem to you to be very small pieces of understanding into this particular language, which has extraordinary power in this world. The more pieces that are translated, the more interest in the whole story may come.

Prof Suniti Kumar Pathak: Actually, just for your information, we had a meeting at Nalanda where the scientists met philosophers. And, there were scholars like Virender Singh and Surukai from the South and some scholars from Patna. The same question came: can s*hunyata* be measured in the question of understanding or rather in the term of 'consciousness'? This is a very subtle term. Is *shunyata* the evacuation of the phenomenal entity or is it something else? That was our primary point of search. We came into agreement that consciousness is the factor which may be the common term by which we can understand the importance of the Buddhist concept of *shunyata*. I used the word 'concept' although it is not a concept but is purely an experience. We can say, in the surface line of the mind, it can be enumerated and it can be measured, and it can be done with a high proficiency of the modern technology. It is just hypothetical and conjectural, but that was almost accepted.

And secondly, I would like to refer to the attention of Venerable Rinpoche; probably his question was about the *Bardo*, that is, how life comes from one to another through the change of the mind. Prof., what I wanted to ask is: how the *shruti-chitta* and *pratisandhi-chitta* come together with the help of the *vijnana* and *pravrittivijnana*? I think, probably that was his question. There are so many notes by Alex Weimen but as today we have had the great occasion of having a learned practitioner monk, we would

like to have better understanding and clarification of these subtle conceptual ideas which are hovering in our minds. Thank you.

Prof P.K. Mukhopadhyay: One particular point, a very important point which Prof. Rinpoche made, has not been attended to: When we ask for the experimentation, we try, in fact, to correlate the physical-physiological with experiential. That is granted. But, there is a pre-supposition among all of us, most probably, as if these physical-physiologicals are quite independent of the experiential. But, he pointed out that this could be manipulated also. It is a very important point that physical-physiologicals are completely independent. Even when we are able to establish the correlate, we can never be sure that the correlations are purely objective.

An audience: All those feelings of physiological movements have been published recently in different papers. It does not mean the highest experience.

An audience: This point is not attended to sufficiently that the total independence of the physical and the physiological over the experiential is not a fact. It has not been admitted in *any* of our traditions.

Swami Atmapriyananda: Sri Ramakrishna subjected himself to those kinds of tests. Unfortunately, the technology was not that advanced and the physiologists pronounced him dead.

Prof Jonathan Shear: I think that Prof. Rinpoche's discussion has stimulated everyone's mind here. We could go on at length. But, we are about 20 minutes over our time, I think. I was supposed to recapitulate and I really do not know what to say. It is such a wealth of material. I think, the central experience many of us have had, is hearing and having many of the concepts with which we have had some familiarity. Those have been put in readily comprehensible terms, and having had the advantage of being (what we cannot have with a book) able to ask: Oh! do you mean this; do you mean that? I know for myself — I am very, very deeply grateful for sharing your wisdom out of compassion for us,

hence sharing your knowledge with us. I would like to thank you very, very much.

Swami Prabhananda: On behalf of this small assembly, I would like to extend our heartfelt thanks to Prof. Rinpoche. From the interaction it is very clear that you have really raised a lot of points which require intensive discussions during this seminar. In fact, this has been virtually the keynote address for the next few days' seminar. Thank you very much for raising these issues. As you mentioned, when you speak, you speak from one platform. Others receive that one and they start thinking from another platform. Probably at the end of the seminar, with your assistance, we would reach some kind of consensus — not the inner one, but some kind of consensus. So, I also thank you very much, Prof. Shear, for coordinating this session. Thank you, all participants, for the lively discussions. Thanks to the monks of the Ramakrishna Order. Thanks to some other listeners, who are there apart from the participants. Thank you all.

DISCUSSION ON THE PAPER OF SWAMI VIDYADHISHANANDA GIRI

Title: *Internal Instruments of the Witness-Consciousness*

Coordinator: *Dr Debrabrata Sen Sharma*

Coordinator: I would now invite questions. You can now ask Swamiji on his paper, if you have any question. Swamiji, we have ten minutes more.

Prof P.K. Mukhopadhyay: Two very short questions. Actually, one is just an enquiry. You somehow correlated the word 'atom' with *ātmā*, if I am not incorrect. In Greek, the word 'atom' carries the notion of something that cannot be parted, i.e., not divisible. But, that is not important. I have failed to find what you are trying to carry over to your listeners. And, what you are saying about certain experiences, in terms of *Samkhya-yoga*, etc. are equivalent descriptions. 'Equivalent description', as it is used in science, is a technical term. So, you are trying to establish some kind of equivalence. As we have no experience, it may be anecdotal. So, the first question is: Is it only equivalent description that you are trying to make us believe? In *kriyāyoga* or within *kriyāyoga* itself, there are different traditions of *kriyāyoga*, as far as I know. At least in the outward sense, there is one tradition, *guruparamparā*. Another is *vaṁśaparamparā*. I know about these two traditions. I know some of the *vaṁśaparamparā kriyāyogins* also. My second question is: Is it that, whatever you are saying is on the basis of your experience or what you have heard from your *guru*? Is that common to all the sects and sub-sects of *kriyāyoga*?

Swami Vidyadhishananda Giri: The second one first. In the *yogasūtra* there is an aphorism — *tapaḥ svādhyāya īśvarapraṇidhanāni kriyāyogaḥ. Kriyāyoga* is the hidden method of the *yogasūtra*. You are saying about Lahiribaba's *kriyāyoga*. I belong to that lineage. I belong to the monastic lineage and not to a familial lineage. You must not forget that I am a monk, first and foremost. So, Himalayan *yoga* tradition encompasses *kriyāyoga*. *Kriyāyoga* is not outside of the *yogasūtra*. It is a method which is a combination of the three *yogas*, namely *karmayoga*, *bhaktiyoga* and *jnānayoga*. The *tapaḥ* part is *karmayoga*, the *svādhyāya* part is *jnānayoga* and *śvarapraṇidhanāni* part is *bhaktiyoga*. So, the method of *aṣṭāṅgayoga* cannot be looked at separately from *kriyāyoga*. For those who are calling it anecdotal, I told you in the beginning that if you do not find it to be correlative, then take this as a model for your experiments, because only a trained *yogī* can repeatedly reproduce these in the laboratory of his own body. It cannot be told in words, exactly what is happening in the experience unless you study with a monk who has repeated revelative understanding, revelation of these processes inside the body. Of course, being a neuroscientist in my pre-monastic years, and setting up two Nobel Prize-winning labs, I was privy to test the model first and foremost, perhaps before others. There is an advantage there. But, *kriyāyoga* as taught by Lahiribaba through a technique, is practised. The technique is the *saṁyama* technique which comprises the attention on the sound, union or meditation on the vibration of the sound, and revelation through the illumination thereforth. So, in other words — the *dhāraṇā, dhyāna, samādhi* become the *omkāra*, sound, vibration and the light. And, using that just as a tool to enter, to cultivate *prāṇā* in the body and to enter the astral body, one cannot avoid the scriptural *samādhi* — the illumination. First of all, the layers of the astral body, *manomaya kośa* and *vijñānamaya kośa* have to be revealed in that stage of the particular level of *samādhi*. There are the *samādhis* of the causal body, the *savichara* and *nirvichara samādhi*, then *savija* and *nirvija*,

the *samprajñāta* and *asamprajñāta* being the highest. Through all these *samādhis* which are reproducibly done, the pulse and the breath cease. That is the first basic observation from outside when experimentalists see a *yogī* just sitting, actually, he is illuminated inside and is very calm. He is able to see the inner working of the mind, how the thought processes happen, how the intellect determines and how the information is transmitted between the heart and the head. And then, using the higher levels of the practice of the *kriyāyoga* and *samādhi* techniques established in the *Yogasūtra* and the *Bhagavad Gītā*, one can enter into the causal body. 13-14 hours of *samādhi* and deep communion are needed over the years repeatedly to get into this kind or level of detailed reproducible observations which are tangible. So, what I have given you, you can take it as a neuroscience model. You can take it as what could be — how the mind is calculating everything inside the brain. The brain could be following the orders, but they are extremely fast for you to see in the current time dimension. You cannot determine the gap between the thought and the speech. So, you have to go into a different time-space sphere and that is possible only through the technique of *saṁyama* as established in the Patañjali *yogasūtra*. The *saṁyama* technique is what is used to unravel and go through the *samādhis*. So, what is given as the first level in Lahiribaba's lineage is the cultivation of physical body and entering into the astral body. There are 108 *kriyā* techniques and there are many lineages in the Himalayas who cultivate the mystical teachings of the *kriyāyoga*. The ultimate giver of *kriyāyoga* is Krishna. The *Kaliyuga* began in 3102 B.C. So, *kriyāyoga* has been revived, it was not founded in 1861. It was revived for practice again. That is considered as the very, very mystical secret part of meditation in the Patañjali *yogasūtra*. Only very ordained lineages can give out this teaching. In fact, I had to take permission from the Himalayan monks, even to reveal this in a public conference. Because those who have not had the training of *yoga* and *Vedantic* intuition will find it very difficult to understand — how the causal body and astral body actually work. But, you

have some semblance by reading the scriptures that there is something which is matching. I did not want to quote verse, to give validation from scriptures as that will make it very difficult for everyone to understand. I wanted to present experience, observation. Have I attained birthless-deathless state? Well, in a very humble way, yes. Have I attained *pūrṇa sākṣātkāra*? No one can say that, because Lord Krishna is sitting in the *sacchidānanda dhyāna*. If he is sitting in the *sacchidānanda dhyāna*, no *yogī* can say that he has attained *pūrṇa sākṣātkāra*. It is not possible to say that. But, is it a valid model verified by other *yogis* who are trained similarly? Yes. Is it the information you want to know that it is not anecdotal? This is the experience of many, many Himalayan *yogis* and monks. I am only saying what is absolutely proven through their meditation. I did not come here to say something bookish. So, that can be taken; if you want to take it as a neuroscience model, take it. I have discussed this with physicists, I have discussed with Prof Sudarshan, and I see Prof Mukunda is here. Consciousness from *atman — brahmamaṇdala* radiates only from a pinpoint like a poppy seed in the centre of the heart; through the light and *prāṇā — sukṣma prāṇā* radiates, functions, illuminates the astral body. No separate entity inside the astral body called *ātmā* is radiating the light there. *Ātmā* is only in the heart. So, *hridaye citta samvita* — you have to enter inside *chitta* to see your past *samskāras*, past life. I have been a monk and a priest for eleven lives, this is my twelfth life. So, Himalayan *yogi* system does not create doubt and duality. It unifies on the basis of severe penance and experimentation.

Swami Atmapriyananda: I have a small problem with your 'heart', not the model. See, all the *Śruti* texts and the traditional *Tantra*, etc. clearly say that the *anāhata*, which is the heart, is the *sukṣmaśarīra* and the *ājñācakra* corresponds to the *karaṇaśarīra*; and the famous statement in the *Kathopanishad* is:

yacched vāñgmanasi prajñastad yacchejjñānātmani
jñānamātmani mahati niyacchet tadyacchecchanta ātmani.
(I.3.13)

So, corresponding *Hiranyagrabha* is the macrocosmic counterpart of the *anahata*, which is the heart. Thus, you are reversing it and I do not know whether it is supported by the *Śruti*. Do you have any *Śruti* text to support this?

Swami Vidyadhishananda Giri: Yes, I can give you thousands of references. We are experts in scriptural interpretations. We spend all our time doing that.

Swami Atmapriyananda: Just one?

Swami Vidyadhishananda Giri: I can give you. I have a whole list in my bag. I will give just now.

Swami Atmapriyananda: From *Upanishads*?

Swami Vidyadhishananda Giri: From *Upanishads*, from the *yogasūtra*.

Swami Atmapriyananda: Some major *Upanishads*?

Swami Vidyadhishananda Giri: What is meant by some of the major *Upanishads*?

Swami Atmapriyananda: *Upanishds* having Shankara's commentary.

Swami Vidyadhishananda Giri: Our main *Upanishad*, for *yoga* and *Vedānta* together, is *Śvetāśvatara*. But, there is *Nrisimhottara tāpani Upanishad*, and there are other *Upanishads* of which I have a complete list. There is a complete list of all these references in our research. I will be very happy to share, because it will contradict your interpretation.

Swami Atmapriyananda: No, it is not an interpretation. See, this is not a question of contradiction. You have to pass through the subtle towards the causal, when the *kuṇḍalini* awakens. For example, Sri Ramakrishna's experience contradicts this statement. You go to the *anāhata*, then you go to *sahasrāra*, through the *ājñā*. It is clearly stated that at the *ājnācakra* level, you have the *savikalpa* experience, not *asamprajñāta*, at all.

Swami Vidyadhishananda Giri: That is correct. *Savikalpa* is a *samādhi* of the astral body, not of the causal body. Through the

mind's eye you can see inside. Well, we can talk about it more because this is very, very technical.

An audience: How to awaken the soul? The five senses are important instruments. Then, why do we need another instrument, the antenna of intuition to have the message of the Unknown? Which source is more important, *jñāna* or practice?

Swami Vidyadhishananda Giri: Practice is more important.

Prof Jonathan Shear: I would like to thank you very much for getting permission to present this material to us. I have two very brief questions. Do I understand rightly from what you just said and the model that you gave us of the subtle and causal bodies, that these do correspond to your own experience? (Swami Vidyadhishananda Giri nods, and Prof. Shear responds) That is a "yes". And secondly, when you say that it is not anecdotal because many people have come to this experience, that to me opens a research topic — finding people and examining experience. It is especially interesting when one does phenomenological research to find out the aspects of experiences people have in common that they had not known about before, as a product of their practice. I would like to have your comment on that notion. The third little part is — you said that it is not anecdotal, the statements about the clairportation and other dimensions where you have long experiences and then come back and it is just a few seconds, and people manifesting things. Now, many people here know that one of the things I very much like is when people state that this kind of thing exists, which I would love to see. To be scientific, a question has be presented in such a way that people who were not prior believers, or people who like to believe but do not have evidence yet, can actually see it. So, in this part, have you seen such manifestation yourself, and is it possible—and I hope it is— to have people actually demonstrate some of these apparently, so-called super-normal abilities? This I think not to show off. But because, I think, out of compassion for the whole planet, which does not have even an inkling of what consciousness could do for people individually and society as a whole, it could be a very

powerful communicative mechanism moving the institution of science, which moves on the surface of the collective consciousness of the planet very profoundly.

Swami Vidyadhishananda Giri: Have I actually seen people manifest? Yes. Is it right to do that in public? Most *yogis* and spiritual people and saints, monks would absolutely abhor showing that because it is belittling the grace of spiritual power that has been conferred on to them for the purpose of knowing something deeper. So, the *vibhūti* — the extraordinary power which come from the conquest of practice and getting repeated illumination is never used for the purpose of showing off. Now, there are spiritual teachers, who show such things to impress upon devotees, or even sometimes to gather devotees. In most traditions of the Himalayan mysticism, that I belong to and especially, in the monastic traditions that I belong to, there is absolutely 'no-no' to do that, because it belittles the entire spiritual foundation of what is given to them.

Prof Jonathan Shear: If I accept that, which is not difficult, then my comment would be perhaps: if we define science as methodology rather than as particular theoretical contents or doctrine, then it might not be appropriate, so far as I can understand, to call that 'scientific', even if it is true. Of course, science is not co-extensive with truth. But, if one does not go through the appropriate methodological steps, it seems inaccurate from the ordinary accepted English meaning of the term, rather than the affective halo of the term, to call it 'scientific'. Will that make sense?

Swami Vidyadhishananda Giri: It depends on what you call 'scientific'. If you call what is generally accepted as the reductionistic method of observation through reproducibility as is practised in the laboratories around the world, that science is limiting to the material world, that science cannot explain even if you see because if someone manifests from another higher dimension, something in front of you and it is not co-relatable in time and space, as you are watching with your senses and mind, it

will be very, very difficult not to constructively apply some higher scientific principle, call it super-science or supramental science, to approach a paradigm, defining a paradigm to investigate that. Now, when I went to the Himalayan caves, and spent time with *yogis* and mystics, at first they wanted to check whether my enquiry was genuine, whether my askance was genuinely spiritual. If your askance is not genuinely spiritual, lo and behold, they are not going to show any of their *vibhūti*. They will show you only if you are a genuine seeker. When you bring it down to reproducibility and non-anecdotal approach of a modern laboratory, you have the problem of losing the spiritual intent. And, when the spiritual intent is lost, more spiritual adepts will find out of place. This is why, I myself have refrained from experimentation in the United States on various stages of without pulse, without breath, without this, without that. It is because it belittles. It is founded on a wrong hypothesis that the brain controls the mind or there must be a material reason, an observable, tangible reason. So, when we approach the mystics, we must present a scientific paradigm, an experimental protocol. If that experimental protocol addresses the supramental, if that addresses issues beyond the physical, I am sure that they can be convinced to take part.

Prof Jonathan Shear: What you said is exactly the critical point. This is what I meant by scientific method as not attached to any particular causal or ontological paradigm. The things that I plan to present, that I had hoped a gathering like this could begin, is to design protocols that would help illustrate what you are talking about, and would help illustrate a paradigm that consciousness is quite beyond the standard existing paradigm. I would only make one caution from my experience: until we do that, calling it 'scientific' appears to have the opposite of the desired effect. When we call something 'scientific' and do not fulfil the scientific protocols — even for good reasons — then people say this does not look scientific, and they will discount the rest of what one has to say. This, I think, is what actually tends to happen. So, I hope that you would really like the project of designing protocols to demonstrate something significant.

DISCUSSION ON THE PAPER OF AVRAHAM ELQAYAM

Title: *Introduction to Kabbalah*

Coordinator: *Prof Debabrata SenSharma*

Coordinator: There is little time left. Even then, I would ask the learned participants and other people — if you have any questions, you can seek clarification on any point that he has made on the paper.

Swami Prabhananda: What is your personal experience in the process of meditation?

Prof Avraham Elqayam: I do the Kabbalistic meditation. My grandfather was a great Kabbalist in Jerusalem and he taught me the Kabbalistic meditation which deals with the letters. In the mystical experience, you can see the letters flying and sometimes the letters come to your body and enter your body or your heart. My great experience was of the name of God, Jehovah which entered my body. This was one of my great experiences, if you ask me.

MM Dr Govinda Gopal Mukhopadhyaya: Is it also through music?

Prof Avraham Elqayam: Yes.

MM Dr Govinda Gopal Mukhopadhyaya: How is music used in your meditation?

Prof Avraham Elqayam: When you utter the letters by chanting, it is music. You repeat *Mihizmolezadzi* all the time, like a *mantra*. This is music. There is also music played by a group. You hear the flute played by the group. But, this is done in a group, not individually.

MM Dr Govinda Gopal Mukhopadhyaya: I mean, is it on the vibration of the music or the sense of the music that you

concentrate on, during meditation? Is it on actual tune or vibration?

Prof Avraham Elqayam: I concentrate on letters, just letters. There is no semantic of the letters to concentrate upon.

Prof P.K. Mukhopadhyaya: Do you mean the shape of the letters?

Prof Avraham Elqayam: Yes, yes.

Prof Jonathan Shear: Yes, can you tell us anything more about the quality of the experience? I can have an image of letters entering into my mind. But, one of the things I would hope you would discuss is the phenomenology of different experiences, so that we can begin to look for parallels, differences, even things like physiological and behavioural correlates and effects. For example, perhaps I can see letters like glowing things with fire coming, and then something happens to my consciousness – an expansion, an outpouring of devotion. I have no idea about your experience though. If you could elaborate any more what actually happens to your awareness? What is the actual content? It is very abstract to me, merely the notion that the letters 'enter in.' Something more, if possible.

Prof Avraham Elqayam: What happened to me is that—after meditation, verses from the Bible come to my tongue spontaneously and I say these very fast, unconsciously. Verses from the Bible, I do not know which verses come to me. If I write them, there is a message to me for the day or for the week, regarding how to behave.

Swami Atmapriyananda: You spoke about the tree of life, but what about the *Shri Yantra*? You have not elaborated on *Shri Yantra*. How is it used for meditation?

Prof Avraham Elqayam: I wanted to show here the similarity between the *Shri Yantra* and the Tree of Life. There is the triangle also, in the Tree of Life, the Transcendent manifested Himself by triangles, by 3 or 4 triangles. Up and down, if you see it. That is

Kabbalistic. This is not my way of meditation, but some Kabbalists do meditation on the geometrical structure like the triangle.

An audience: You spoke of the history of Kabbalah. It gave me an impression, as if, it was started in Spain.

Avraham Elqayam: Yes, Kabbalah in a narrow sense which included the Tree of life, appeared first in Spain in Ziona, near the Pearn mountains. Ziona is a very small town. There were 3 or 4 Kabbalists who wrote about the Tree of Life. But, they say it was transmitted from their Mentor. This is what God said to Moses on Mount Sinai. But, as a researcher, we have no evidence of Moses, having gone to Ziona.

An audience: Originally, it took place some thousands of years ago.

Prof Avraham Elqayam: I heard a lecture from a professor of theology that he found this Tree of life in Mesopotamia area.

DISCUSSION ON THE PAPER OF I.H. AZAD FARUQI

Title: *The Path Yet Travelled*

Coordinator: *Prof P.K. Mukhopadhyay*

Coordinator: You have just heard the paper read. This seminar, this session particularly, was meant to be an exposition, as far as possible, in common intelligible language, of the experiences of practitioners of different spiritual traditions. I understand that it is very difficult to keep separate the methods of attaining those experiences and those experiences themselves. But anyway, before I make the paper open for discussion, I would first go back to the author or the presenter, if he has something to add to what he has presented, by way of quality, nature and grades of the experience itself rather than the different methods. If he has something to add to, we should hear it first. I think, that will be much better. I hope the speaker will share with us. So far as the method is concerned, we have noted already that there is a large extent of correspondence between different traditions. When you are speaking of *hal* and *mokam*, we are thinking of the concept of *pratishtha* in *Yoga*. *Ahimsa* is not enough. *Ahimsa pratishtha* is necessary. Similarly, when you are speaking of chanting the name of God, loudly and sometimes not loudly, we are thinking of different types of *japas* we have – *upanshu* and *manas* and all that. But, these are all about methods. My request is, do not take it otherwise. Please add, if you have anything to add as to the quality, grades, etc. of the experience gathered using these methods.

Prof I.H. Azad Faruqi: One thing I would further add to the method, which may be, the influence of Indian spirituality. That is, in the *Chistia Sabriya*, there is an emphasis on *pas-e-umphas* – *pranayama*. When you meditate on the name of God, the *prana*

is going inside and is coming out. So, there are various methods which are further added to the methodology. Then as far as experience is concerned, this point can be added that there is much emphasis given on it. In the graduation course syllabus, after the initial stages are done, you have to meditate on God without qualities, only on His Self, nothing else. Whatever comes to your thinking, you have to negate it – *neti, neti* of the *Upanishads*. So, you have to feel simply the presence of God devoid of, peeled off all qualities. You have to feel the pure presence, continuous presence of God in your heart, in your soul, around you. So, I have found that point in the letters of the *Musshaque* of this Order, that has very much emphasized that whatever form comes to your mind, you have to negate that, till you have reached that pure presence of God.

Coordinator: I have another question. It is rather a personal question. Do you have some experiences yourself?

Prof I.H. Azad Faruqi: Listen, by profession I am a teacher, in a secular university. I have received secular education always. I have attended many universities. I have degrees from many universities. I am not in the traditional atmosphere anymore. But, I know the value of tradition. Because of my encounter with the traditional saint in my childhood, I have known that the traditional Sufi line has produced great men who are perfect and spiritual. And then, I know about the personality of Ramakrishna Paramahamsa who himself was unlettered and completely in the tradition of Hinduism and that he was an expert in spirituality. So, the traditional lines of India whether Islamic, or Hindu or various other traditions were fully capable of producing the best spiritual specimen of mankind. I think, the personality of Paramahamsa Sri Ramakrishna can silence any critic who might doubt the traditional method of attaining the highest spirituality. Similarly, the saint I encountered with and other saints also can do that. Now, it was in 1993 that I became a *murid*. Since then, I tried to follow the traditional method because my Pir sahab, who was a nationale of South Africa and was the *Khalifa* — successor of the Indian

Saint. Following his instructions and through other sources of the same tradition, I tried to practise and perform the chants etc. for the last 13 years. Well, now I am in a position that I have made God my goal and in all circumstances, God is and should remain my goal of life. As far as spiritual experience is concerned, if not constantly, but for most of the time, I think of the presence of God because of the result of those practices. But, it is very weak and that is why I have given the title of this report, *The Path Yet Travelled*. Yet travelled path is very short and the greater part of it is left yet untravelled. So, I have to go a long way and attain something to speak of.

Coordinator: Wishing you best of luck. Now, it is open for discussion.

Swami Atmapriyananda: The presence of a qualitiless and formless God is very difficult to conceive. Either, it is quality without form — we call it *saguna* and *nirakara*. But, you are mentioning a formless or qualitiless God's presence. This seems difficult to conceive, the presence of such God.

Prof I.H. Azad Faruqi: There are two or three concepts which I find very pertinent in the milieu of this order, the Sufi Order. One is this. It is so difficult that sometimes the masters also admit that it is very difficult. They say that it is what you need to have. This is the ultimate reward. There is nothing more than the result of all your practices. What you are going to get is simply a feeling of presence. That is the fruit of your *sannyasa* and *yoga*, that you will attain, the presence of God. God is not going to come and embrace you physically. All these have to be in your imagination. In fact, in some places the master writes that it is your imagination only which you have to make perfect. When the imagination is perfected, it becomes 'virtual seeing'. *Mushayada – jab khayal pukhta ho jayega to yahi mushayada ho jayega.* That will become the actual experience. There is one more point that struck me. They say continuously in this tradition that non-attainment is better for a novice, for a seeker than attainment, because attainment

has the assertion of the self, but negation of the self is that what is required. So, the assertion of your self is the barrier between you and God. When you have the feeling of having nothing and feeling dejected, it is better for you. It is good to have a feeling of impoverishment, a feeling of not having attained, because then you will be away from pride, etc. Thank you.

An audience: I am most impressed by your lecture, by the honesty and simplicity of it. I think, those are the hallmarks of Islam. But, whenever you are thinking, there is a name. There is a *namarupa* when you are thinking, when you are chanting. You are calling that by some name. So, there must be a *namarupa*. It cannot be totally void.

Prof I.H. Azad Faruqi: There are many qualitative names of God in Koran. Ninety-nine names of God are usually memorized by every child. So, all these names refer to various qualities of God. But we have to, I think, realize that these are only pointers to reality, which is beyond conditions. When trying to attain actual experience of that reality, I think, the masters want to guard the disciples from attaching any particular quality, limiting God by any quality. Because they want direct experience of the presence of God, presence of the Divine, qualitiless Divine presence. Well, this question is very pertinent and I do not think I can answer it really.

Prof N. Mukunda: I would like to thank you for your eloquent presentation. I have two very brief questions, to have a better understanding of things. Can you tell us whether there is any notion of secrecy in the teachings of this tradition or is it open in spirit? Is it to be protected by a small group of people or does it welcome everybody? That is the first question. The second is: Do you see any role for scientific analysis, scientific study of the experiences in the tradition, as a whole? Or, would that be out of place? I ask the question because of the nature of this meeting.

Prof I.H. Azad Faruqi: The first question is about secrecy. There is secrecy. The secrecy is among the later masters of the Order, who had been mostly *maulanas* of *madrasas*, particularly,

Dar-ul-Deoband, the greatest Sunni institution in the subcontinent. They have tried to avoid the discussion of monism, although monism is a part of their order but they do not want to discuss it, because they feel that there is a vulnerability in this philosophy to be deviant, because monism ultimately eliminates all distinctions. So, the discipline of *Shariyat*, the discipline of obligatory duties, etc. can be affected by the philosophy of monism, if a person is not very much aware of the differences between philosophy and the actual practice, etc. So, they avoided the talk of monism or *advaita* but their experience ultimately leads to *advaita*. And, *advaita* has been the practice of the older masters of this order.

Prof N. Mukunda: The second question is: Has science any role to play?

Prof I.H. Azad Faruqi: Well, that is the bone of contention; there will be disparity here, if we bring out what is involved in this. I think, the very topic itself can be a point of discussion. What we understand by science has been mentioned many times since morning. It is the study of material phenomena through senses and analysis of mental faculty, but spiritualism by definition starts where science ends. It is about a realm, about a dimension of human personality which cannot be judged, cannot be experienced through senses. All religions are based on such experiences, which are supernatural, supermaterial. The limit of science is towards the material phenomena. How can an instrument devised for a particular purpose judge something, which is beyond its capacity? So, I wonder how we can bring these two together. Is it not like trying to fit in some square peg into a round hole?

Prof N. Mukunda: Just a very brief response. I like your answer very much. It is very honest and forthright. I hope, I will be able to present my understanding of the science of matter, how it goes beyond what one normally thinks as pure material, in my presentation, on science.

Prof Nilanjana Sanyal: I liked your lucid presentation very much. But, as it has been mentioned by Swamiji also, I would like

to put a question to you. You said, in order to experience God, we need to imagine something. But, so far as my knowledge goes, depending on the psychic frame of a specific individual, imaginations are sensory process-oriented phenomena with us. In most of the situations, imaginations are vision-oriented processes. So, how can we really experience God without having any form or quality? How can we have particularly any formless imagination, any sensationless imagination?

Prof I.H. Azad Faruqi: I think, you are right. Each one of us has his own conception of God. Each individual has his own God, so it depends on the character and the bent of mind of the person how he conceives his God. Those people who are always angry with everybody may picture their God as an angry king and those who are of loving nature, think of their God as a loving God, etc. You progress from qualities to qualitilessness; I mean, you have to. In fact, the idea is that these qualities which we imagine for God should be understood as human approaches to God. They do not exhaust God. God is much more than all these qualities. So, they want to emphasize this point, I think.

Prof Anjali Mookerjee: First of all, let me express my appreciation for this paper. It was really extremely nice. In this context, Dr Avraham Elqayam, I appreciated your paper also. But, as there was no time, I could not ask questions. I think here the difficulty is that, if we say God we need some, as Swamiji said, *saguna*. It has to be *saguna*. But if we go beyond God, if we go to *advaitavada* – monism, *Brahman*, then we need not have any qualities. You need not *arop* anything on *Brahman*. This is what we come to know from the texts. We have not experienced. And, the second one is not a question; you may say, it is a comment. We have the *Baul samprayada* in Bengal, especially, who are somewhat related to the Sufi *sampradaya*. Probably, there is a difference because, the really enlightened *bauls* have their own secrets. But, their songs are very much akin to Sufi music and have similar type of tune and words and *bhaya*. This is one thing I experienced once. I was at Trieste and we had scholars from

various parts. There was a Greek scholar who was playing a tune, which was exactly like that of our *bauls*. I wondered how he played it! So, I asked him: from where did you get this? He said that they have that kind of music in Greece. The music played by him sounded to me similar to the Sufi music. If you go to a *gurudwara*, you will find that the *kirtans* of the Sikhs have similar tunes. All have the same type of tune. I mean, when it comes from the heart, they all give the same expression. This is where it matters. That is all. Thank you.

An audience: I would like to ask about the same type of tunes. Sufism came in the wave of the *Bhakti* cult. If you kindly impress upon us the aspects of *bhakti* as conceived by the Sufis, and about the connotation they give to the term. I think that would be illuminating.

Prof I.H. Azad Faruqi: Well, as far as my little knowledge goes, *Bhakti* tradition is very ancient in India. For example, if you take the *Bhagavad Gita*, it can be said to be the first exposition of the regular *bhakti marga*, even if the *Bhagavad Gita* is put very miserly in 200 BC. The *Bhagavad Gita* was written long before Islam was born. And after that, you see, we have these in South Indian *bhaktas*, Shaivites and Vaishnavites, both. So, *Bhakti* tradition was an intrinsic Indian development. In medieval period, the Sufis found their fellows and friends among *bhaktas* and they exchanged notes and appreciated each other. So, medieval Indian culture became very much influenced by *bhakti* and Sufism, both. But, Sufism also developed outside India. You know that in North India at least, the muslims came and established the Delhi Sultanate. That was at the end of the 12th century. The Islamic culture was already developed. The development took place more than 500/600 years earlier it came to India. Most of the Muslim institutions were only transplanted in India. The Islamic culture already existed in Central Asia and Iran. So, Sufism already has had a tradition before it entered India. But, there have been influences on each other and exchanges; as I mentioned and the Chairman has also pointed out that, there are many practices

among the Sufis which appear to be influenced by Hindu practices, there is no doubt about it.

Swami Atmapriyananda: I think, the question of the scientific thing which came up from Prof Mukunda, has been discussed since the topic is — scientific search. Two common responses have come up since morning. One was that —this is a kind of non-material thing and therefore, the question of science ends there. And, another kind of response is that which Swamiji gave in the morning. If one is not a sincere seeker, not a believer, then there is nothing to share. These are the two common responses. The kind of response of the scientific mindedness, to my understanding, appears to be such that there should be a kind of replicability. '*Anyohpyevam yo viddhyatmameva*'. The *Kathoponishad* ends with the statement. This is a kind of experience which Nachiketa had, following the instruction of Yama, and whoever follows these, will also have the same type of experiences in future. So, unless there is a replicability, science does not stand. Perhaps these experiences, these teachers who have mentioned these, will definitely say that, this can be realized by people in future and not by the people having adherence to a small esoteric group but by anybody with sincere approach. I think, that kind of scientificity is mentioned.

Coordinator: Thank you. By way of concluding the session, I would first identify some of the issues that came up here. To begin from the last, of course, Prof Mukunda will more elaborately discuss the role of science and reason. Here it will be in order if I make a bare statement about a related matter. So far as my experience goes, my understanding goes, there is not a shred of mysticism in the entire tradition of *Yoga*. In *Vedanta*, I mean, in mystical *Vedanta* tradition, it is there. One question that came up is this: Can we think of qualitiless God? The question itself needs to be clarified further because, if you are asking — can the word *Bhagavan*, or an entity named or described as *Bhagavan* be qualitiless? The answer is — no. But at the same time, it is not the word that matters sometimes. For, ample examples are there of expressions

like *gunatitopisho tryakshara trigunamaya*. What is it? *Gunatito* and *gunamaya*. So, both of these have to be said sometimes to communicate the truth. It is easy to imagine 'God' to be qualitiless: not qualitiless in the sense of not having qualities but in the sense of transcending qualities. *Gunatitopi* — it is a very common experience. The other issue is this — sometimes we feel embarrassed when asked about our personal experience, about spiritual experience, in particular. At different levels, many of us are having spiritual experiences. Because we do not rate it very high, we do not like to mention it. For example, as a person practises a little, and reflects on his spiritual progress, he finds that he becomes less cross, becomes less angry and more tolerant. These are spiritual experiences. Spiritual experiences need not have to mean the experience of the presence of God as such. There are levels of presence. So, spiritual experiences should be taken in that way and then we can open up and can compare the grades of this. Therefore, I think, it is quite in order to ask what spiritual experience we have. We can exchange it, unless we set the standard too high. The other thing which I would like to add is this — you made one assertion. It is a good point but it needs clarification: non-attainment is better than attainment. The apparent meaning is obvious. Attainment leads to some amount of inflation of ego, that I have attained this. Even after '*asamprajnata samadhi*' in *yogic* tradition, there remains something still to be transcended. And that is this sense, that I have the power to know everything – *sarvajnatva*, etc. That also has to be transcended. So, with *asamprajnata samadhi*, the *yogic* practice does not end. There still remains something. In *Vedantic* practice also, even after you have taken care of *avidya*, there still remains *avidyalesha*, that has to be transcended. Therefore, this sense is quite clear that non-attainment is better than attainment. But, are we not confusing the two? The attainment and the assertion of the attainment? Most probably, it means that the assertion of the attainment must be avoided, not the attainment itself. So, that is only a figurative way of saying that attainment is less than non-

attainment. One more question I would like to ask. I am not asking you to tell us about your experience, but as you have read many Sufi literature, on the basis of that, would you tell us what account did you get there, when some saint has experienced and is posted in God consciousness, as you say it? Does he experience the whole world in God, or, is God still Transcendent? This is the question with which I will end this session. The last one was a question, the other one was a comment.

Prof I.H. Azad Faruqi: There is one saying which different people understand differently, 'If you have lived one religion properly, you have lived all religions.' May be, it points to the thing that from whichever path you come, the ultimate reality is the same. So, you reach the same place, the same reality whether you are confined to one tradition and others reach it from a different place. Ultimately you reach the same place. This saying may have this meaning that only God is real and everything is unreal, as Sri Ramakrishna Paramahamsa used to say. This line impressed me much in my young age. It is a literal translation of the *kalma* of the Muslims – *La hi laha illalalla* – there is no reality except God. Only reality remains. If spiritual experience is authentic, it will be this experience that God is real and everything is unreal. And, they say that in *samadhi*, you lose yourself, your consciousness and consciousness of the world. In Sufism also, there is the state of *tehraq*. This *tehraq* is what is *samadhi*. *Tehraq* literally means drowning. You drown in God and you lose consciousness of the world and yourself.

An audience: Actually, it is not a question. It is a follow-up comment on a point which has been subliminal here and which has been brought out here by Prof Mukunda and Swami Bhajananandaji. It is not correct to conclude that there are no scientific experiments devisable and everything is in the realm of materialism. There are experiments by the so-called Greenbird etons which were carried out more than a decade ago, where people were completely sealed inside Faraday cages and still they communicated. Their electrocephalographic brain-waves were

recorded. The communication was faster than the speed of light. The same experiments were repeated between the United States and Japan, to make sure that someone who was inside the Faraday shield in the United States can still communicate, without a prior hint, with someone who is in a Faraday shield-cage in Japan. I do not know the result of the experiment and what happened. Prof Amit Goswami from California would probably know because he was following the experiments. It depends upon the protocol, it depends on how you define the goal of experiment. So, I do not think it is necessary to conclude from the morning session or from the inaugural session that a blending is not at all possible. As you rightly pointed out and I feel personally very uncomfortable in sharing my experiences, it is very difficult for anybody who has had the glimpse or has an immersion in Godhood, even to say that he has, because it is a complete anti-thesis, a too egoistic assertion and therefore, with due respect to Swami Prabhanandaji's aim of this Conference, it is very difficult to explain experiences in an elaborate way very methodically which can fit a scientific protocol. I think, that has to be kept in the back of the mind.

Prof I.H. Azad Faruqi: Only, he has brought out the point very clearly which is the bone of contention, here.

Coordinator: Thank you very much for such a brilliant and honest presentation.

DISCUSSION ON THE PAPER OF ODED MAIMON

Title: *Deep Consciousness Experiences*

Coordinator: *Prof P.K. Mukhopadhyay*

Coordinator: Many thanks, Prof Maimon. Professor began with a sort of humble comment about what he is presenting. It is, of course, his personal experience. A person is not a featureless entity. The experiences of a person means a person's own experience as informed by different inputs. It has been rightly pointed out that spiritual journey is a process; it takes time. There is no uniform progress. There is progress and regress and then again progress and regress; it takes time for stability to be attained. It is highlighted by every person. Every person has a list of experiences but fails to express in common language. So, there are two aspects. On the one hand, we are not permitted to assert or announce spiritual attainment for various reasons and the other part of it is that any experience we have, whatever experience, it is very difficult to express in the language we are familiar with. This is again almost the uniform experience of very many persons. *Shabdajalam chittavibhramakaranam*. A poet, like Tennyson said — it is a sin to put one's thoughts and experiences in words because while they half express, they half conceal. The author of *Creative Evolution*, Henry Bergson, said that we are born platonizers and that is why we just cannot express in this Platonic language of fixed ideas and fixed concepts. This dynamic process is going on in spiritual process all the time. So, we are bound to use certain symbols. And, the danger of it is that, once you put your thoughts in symbols, people are left somewhat free (or compelled) to interpret it differently. Now the paper is open for discussion.

Swami Sarvapriyananda: Professor, I would like to have a small clarification. The two colours, you said, represent good and evil manifestations in the process of the transformation of consciousness. All the traditional religions agree with you that one can travel through the path of good manifestation, through morality and reach the highest unit of consciousness. But, how is it possible to trace the path of transformation of consciousness travelling through the evil manifestation? You are showing the path on evil side also.

Prof Oded Maimon: Yes, thanks for the question. First of all, I would like to say that the figure represents not only one path because some people can go directly. They do not have to pass all the ways. Someone may take a long time in one level and someone may not, so there is no time notion. And, I think that although it is a little bit hard to say, but there is morality even when you do something bad. Your consciousness moves a little up, because you have to deal with it personally, when you do something that is not considered to be good by the code of morality. May be, you have to do it, may be, you are a part of the army, and there are things you are supposed to do. Those things also contribute to moving up the consciousness levels.

Swami Sarvapriyananda: Do you say, the transformation of consciousness is neutral as far as morality is concerned?

Prof Oded Maimon: That is what I am trying to say. Thanks again, because I did not mention it here. I have this neutrality in this part. That does not mean that you are not angry. Suppose, I am in a class and with a student I need to be angry. So, I am angry and I shout. I may insult him but I am not personally touched by it. That is the way I am supposed to behave. But, the people who look at you, they may say that you are angry, you are happy. But, you can stay in the same position and act as needed in the action. You are not helpless. I will be always at the end of the line. If you need to stand on your position and that is what the situation calls for, so that is what you do. Even though personally you are not

affected by it much, but the behaviour may show that you are on one side or the other. That is the gold colour in the middle.

Prof Jonathan Shear: This last question I found very interesting. Many people, myself included, have the intuition that as one practices one should become better in the moral sense. And then I think of the *Vedic* tradition, where there are stories of all kinds of advanced beings interacting with gods that do all kinds of terrible things. And, in the Judeo-Christian tradition, in Christianity, the mythology of Satan is that, he was the *highest* angel. These stories raise a question that I would like to get your response on. Somehow, it seems to me, if one develops, one progressively becomes more suffused with contentment, fulfilment, happiness, positive affect. Yet, there are still plenty of ways that one can go in different directions. I have the deep intuition that as positive effect grows, what we call bad action will diminish. I studied with Maharshi Mahesh Yogi. He says that when you get filled with wealth inside, the need to accumulate it in dysfunctional ways outside decreases. We find exactly the same thing in Plato, who says that, filled with the true gold and silver within, the need to compete for external wealth beyond the bare necessities of life naturally goes down. On such accounts, as one grows one gradually becomes more fulfilled, the need for external wealth goes down, and the way to get more fulfilled is to see other people happier. Yet, still we have the other stories. Does that trigger any kind of thoughts and responses?

Prof Oded Maimon: Yes, I totally agree with you. The kabbalah, for example, explains also that the goal is to attain the situation where you do not need to be in those two colours, just in one for everybody. And, then the world will change. As you talk of infinity, it talks about it and also gives a sort of time frame. But, for the more practical aspects, I think you are right. As you continue your practices, you tend to view things differently. And you do not have the need or capability even to go to that, what I have there in the red side. So, you change.

Prof Jonathan Shear: The idea is again totally in the grossest biological terms. Organisms can be thought as having two sorts of impulses – one for the individual welfare and the other for the welfare of others. It seems that the more the impulse for individual satisfaction is satisfied, the natural impulse in the other direction (for others) has more freedom to express itself. So, that would be the direction of growth even if in particular situations one acts bizarrely.

Prof Nilanjana Sanyal: Professor, you said even our following the negetive pathways, that is, the evil tracks can sometimes be responsible for prompting us to move towards the progression to higher transformation. To me, the guilt-ridden state of one's mind is a sign of emotional immaturity. Would you please explain the mechanism? How do you expect that such an immature mind would have the urge to move towards higher transformation?

Prof Oded Maimon: I would put it in different words. I would not put it in terms of emotional maturity, in terms of feeling of guilt. I would say, it is one way of learning. For our limited capabilities, we understand one thing by the other. And, this is not a just path that you go through. But, the way to understand this figure is also a transition. So, you are not always here or always there. Unfortunately, when you reach a certain level you do not always stay there, you can digress. You cannot progress only in one way. You need to have the opposite, in order to know that this way is correct and also to know the difference. And, the difference increases, actually.

Prof Nilanjana Sanyal: Professor, I think, to understand the opposite, to understand the variation, identification process is there, one need not have the practice by himself or herself.

Prof Oded Maimon: Well, you do not need to practise but things happen and you learn from them. You grow from them. You do not do it by design. By the way, I think, if you never have those types of practices, you stay somewhat too naïve.

An audience: This is a question not only to you, but may be, to others. For example, you said that there could be a path directly from being born to the figure immediately below. Right? Everybody does not need to go through all these. Right?

Prof Oded Maimon: I am sure that there are many more ways than depicted here. This is just a schematic way.

An audience: My question is: why are there only some people who have these experiences? Is there some kind of touching, or readiness in some people? Why is that? Do you understand my question?

Prof Oded Maimon: Oh, yes. I want to comment on your question, according to the kabbalah tradition. In our times, more and more people would feel the urge to follow this path. I think, people are more ready now. It is the path that leads to the development of the human beings.

Coordinator: One more thing is this, at any given stage of development, things click with some and not with all. Is there any reason for that in your system?

Prof Oded Maimon: Yes, I do not know right now. I think, it is a topic to be discussed by everybody.

Swami Atmapriyananda: He has responded by saying that it happens.

Coordinator: No, he recognized the development.

An audience: My question may be very silly. In ordinary life when you are not an active seeker in the sense of a monk or something, you are leading a householders' life, as you call it. Now, does your path towards spiritual attainment alter your behaviour to the society in a way that it becomes unpractical in a sense? Because, for living a normal life, we need some amount of harmless aggressiveness. All of us do. For example, if you are God conscious, does it prevent you from winning a tennis single's final or scoring a century? In a sense, you need some amount of killer instinct — what is referred to in the West as killer instinct. Does this killer instinct go away when you progress spiritually?

Prof Oded Maimon: I think, in some sense you can refer to Prof Jonathan Shear's answer. The killer instinct may diminish but

still it will remain. Suppose, you are in a queue for ticket for a movie and everybody pushes you. After a while, you also push back, and you get your own ticket. There is nothing wrong in that. Only you personally do not get very angry.

Prof Anjali Mookerjee: Here is the previous question, which was — why some people are ready for it? May be, we can say, it is the *praktana*, or *karmic*. Even in Buddhism, there is rebirth. The *praktana* means, what you have done in the previous birth prepares you in this birth. This could be one answer. The other thing I would like to say — those who really experience – *bhidyate hridaygranthih chhidyante sarvasamshaya / kshiyante chasya karmani tasmin drishte paravare*, all strings of their heart are snapped. And, you do not have any more *samshaya*, any more questions to ask, if you have really experienced Him or It, rather. I would not say Him, but It. *Tasmin drishte paravare*. Thank you.

Swami Atmapriyananda: I am not exactly trying to answer his question, but I want to give a small response. Suppose, you want to score a century, but you are not very ambitious to score a century, then how would you play? I personally feel that if you do not have any ambition at all, you will play your best. This is Swami Vivekananda's idea of *karma-yoga*. The *Mimamsakas* say – *prayojanam anuddishya mandopi na pravartate*. You should have a *prayojana*. How can you do *nishkama karma*? So, I always tell my students to do *nishkama karma*. When you are playing cricket, do not look at the scoreboard. Between 90 and 100, most of the batsmen get out because they are worried about the century, not about the game.

Prof Jonathan Shear: I want to give a personal anecdote. I had a student of Philosophy who was a nationally ranked tennis player. It is very interesting, like many other people at the top, it was when he was relaxed and *playing* (in the true sense of the word) that he did his best. In the martial arts community, exactly the same thing happens.

An audience: You talked about disorder, entropy. I do not know how you have used the word 'entropy', because entropy is the arrow of time.

Prof Oded Maimon: Arrow of time. Yes, that is one interpretation of it.

An audience: The universe is going towards entropy and how do you use the word entropy in this context? We use the word in the context that in spite of entropy we try to build up a connected system for survival as long as we can. Just as, even knowing that death is sure, we want to survive. We know that a vegetable is decomposed, yet we keep it in the refrigerator to give it a life, to have a connected system. I do not understand how you used the word, entropy, in this context.

Prof Oded Maimon: I would answer you very briefly. By the way, I have written two books about it. We use 'entropy' to show that systems are more stable and more reliable than other systems. So, you can compare situations by entropy. That is the way I use it. But, I am familiar with the time arrow which you also can use.

An audience: I hope, you all can enlighten me about one thing. We have talked here much about experience and I think everybody has some spiritual experience. Nobody can deny that one moment or the other, one has some sort of spiritual experience. Experience normally happens in the levels of the hearts. Normally, it is a kind of expansion of the heart. You feel something inside your heart when you put yourself in some conditions. But, there is another thing, which is realization, which is a little different from experience. Realization is that — you have a certain experience, then you learn. You will go on learning either *yoga* or certain other practices, and put yourself in certain conditions in which you might experience something. Then you try to conform to intelligence, to direct knowledge, if it is an experience. It is like furthering that experience. Experience can come spontaneously. Normally, experience comes spontaneously to everybody. And, then you can search for it and look for it, determine it, put yourself in some conditions and try to

realize it, if it is really an experience, if it is an experience of God, realization of God. So, I would like you to enlighten me. Is there some difference between experience situation and realization situation?

Swami Vidyadhishananda Giri: For posterity, I will make a comment. We are talking about experience and how it is related to the field of science. The great mathematician Ramanujam, was discovered by Thomas Hardy when he was actually asked how he could come up with such unbelievable theorems, as many of those are not arrived at through the usual training of mathematics. For a while, he was very shy and was not answering that. Then finally, he explained that Goddess Namagiri comes in his dreams and writes those formulae on his tongue. He would then wake up, write them down and then prove it in the way it was revealed to him in his dream by the Goddess. To summarize, to paraphrase some of the aspects of Professor's talk, I want to remind that the experience correlates with actual presentation of scientific theorems on a piece of paper.

DISCUSSION ON THE PAPER OF SWAMI SACHIDANANDA BHARATHI

Title: *Experiences and Experiments in Spiritual Consciousness*

Coordinator: *Prof Anjali Mookerjee*

Coordinator: Thank you, Swamiji, for your very, very interesting and illuminating talk. The paper is open for discussion.

An audience: I want to ask Swamiji a question. You had decided to speak about your experiments on truth at two levels — social and personal. I think, the personal one is lacking yet and you may elaborate it further, particularly the experience you had after escaping from death. In what form did you experience it? You may throw some light on that and then further say about your personal experience.

Swami Sachidananda Bharathi: That is what I was hinting at — my stay in the Air Force hospital, my awareness of my limitation in the intellectual, the rational process, encountering the Christ spirit, the need to surrender and then the experience of *gurus* coming in afterwards. Because I find, as the *Upanishad* says, when the *sadhaka* is ready, God in His grace will give him *gurus*. So, at the various stages the *gurus* came in my life. I have not known them before. I had some vision or dream, like that of Maharaj himself. I had a dream in which I saw that I was sitting in his lap and he was holding me like a baby with so much of love. I came to him afterwards. I had not known him before. Later on, I found out the person. I came to him in 1984. Maharaj was then at Hyderabad as the Vice President of the Ramakrishna Order. And, he gave me the freedom to visit him anytime. He told his secretary, the Japanese secretary, that I could come at anytime and be with him anytime, that sort of a freedom. Then, I even stayed at the

Monks' Quarters that time. He allowed me that sort of stay. I do not know how to explain this, I am a bit skeptical when I speak of this sort of experience. The fact is that I have gone through several experiences. And, then I had another *guru*, Justice Joseph Veddeyatil, a retired Judge of the Kerala High Court. I have taken *sannyasa* only four years earlier. At that time I was ready to give up everything, to retire from the world and even resign from the Air Force. I submitted my resignation, but the President was not pleased to accept my resignation. For the Officers' appointment or resignation, the President has to be pleased. He was not pleased. So, I decided to quit my job even if the President was not pleased. That is the stage when I had the dream of the first guru, Justice Veddeyatil. To my great surprise, when I went to him, he told me, "Respond to the call as you are called." The first sentence he spoke to me was this. This is from what St Paul said to his disciples. "Respond to the call as you are called." I was a married man. I was an Air Force Officer. I was a responsible son of my parents. He told me, "Remain all these and be better in that." And I tried that. But, there was the inner urge to give up everything and devote myself totally for the quest of spirituality. That time I thought that spirituality means giving up many things, rejecting things. Renunciation at that time meant rejection for me. But, today I understand this as transcendence. Rejection is not the way leading to spirituality. Transcendence is the way. So, in course of time, I came to this realization and was able to find that in harmony; things worked out well. The moment I became eligible for premature pension, I was offered that. Today, I live and work with the pension from the Air Force. I am free in that way. I live in my own world. This gives me a lot of freedom. If I had to depend on somebody for my livelihood, obviously I had to compromise with values. So, that way many things happened in my life. I have gone through this process for twenty-three years and have become a *sannyasi* and am surviving. This itself is a proof that it works.

Prof P.K. Mukhopadhyay: I have a few things to tell you. One thing is, as I understand it, I would like to describe it in this way:

your spiritual path is from death encounter to the stage when death must die. You must be familiar with the name, 'Death Must Die'. It is the name of a famous book that describes the spiritual experience and development of a disciple of Ma Anandamayee. So, to conquer the *abhinivesha* as is *mrityubhaya*, is of course, a normal urge. Now, within that, what bothers me and makes me ask a question is this: How do you reconcile? Do you ever experience any conflict between 'surrender' and 'service' — service to society and surrender to God? This is my first question. It may be surrender to God in the form of s*annyasa* or in any other form. You have described that you have developed a separate system of meditation. You tried with certain methods already available, you were not pleased with those; you established some other method. Some other person may find that your system does not suit him, so he will establish another system. So, can you enlighten us on this point? What limitations did you find in the *Pātanjala* system of *Yoga* including the meditation which did not satisfy you? This is my second question. And, the third is a very small question: Renunciation without inwardization or inwardization without renunciation — how far is that possible?

Swami Sachidananda Bharathi: I am starting with the first question relating to the conflict between surrender and service. There has been conflict in my life. But, as I grew in the concept of surrender, I found that there is no conflict afterwards. When the surrender is complete and the faith is strong, the conflict does not come. Because, service is natural, spontaneous to you. You are not struggling to serve anyone. You are not worried about the result of the service. You have nothing to achieve, no one to please, nothing to gain. You do it out of spontaneous love and devotion to the Master. Having done your bit, you go. So, I find, whenever this little ego comes, little problem comes in, conflict comes in. If this can be overcome, there will be no conflict. And, in the Christian path, this is why Jesus said, "If you love your parents, your wife, property more than me, then you are not worthy to be my disciple." So, it is a demand for total surrender and our own inadequacies

prevent us from total surrender. So, as we grow more and more, by the grace of God, we learn this process. Let me give you a small example of a little ego of mine. Today, I was put in Room No. 27. The receptionist said, "Swamiji, Maharaj wants you to move into that air-conditioned Room - 31. I said, "No, I am happy with this. Room 27 is fine." Then I remembered, Maharaj has asked me to move into Room 31, but I want to show how simple, humble *sannyasi* I am and so I want to be in Room 27 without air-conditioning and the like. I called back the receptionist and told, I will move into Room 31. There are constant temptations of this sort. Even in spiritual life, there is much ego to show how humble, how simple we are. Sometimes our simplicity can be a burden to others. So, that is the conflict part of it.

The second question was regarding the new methods of meditation. It is time consuming and a lot of discipline is required to follow the *Patanjali* Path of *Yoga* or the *Ashtanga Yoga*. Secondly, it does not develop in the Christ Consciousness that I have been looking for, because none of these meditations is rooted in the Christ Path. There is no Christian meditation actually. Perhaps, the *Shanti Yajna* was the first one that developed in this process. I am a man, limited and unfocussed in many ways of life. One thing I have learnt from my Air Force life: the faster you fly, the more focussed you must be. And, even the aircrafts are designed in such a way. You will find that supersonic jets are very pointed. While doing spiritual *sadhana*, one has to be very focussed. So I felt, my experience is essentially in and through Christ. I must remain focussed on to that. Somebody here has said a very interesting thing — if you follow one religion well, you follow all other religions well.

One thing is this, in spiritual path, ultimately when you come to the experience of grace, the reality is one. The paths are many. Once you feel the grace of the Divine, you realize, the Divine is infinite. Coming to the path is difficult, but once you reach that, you find that grace is not limited to any religion, to any individual path. It is there for everyone, as the light of the sun is for everyone.

An audience: Is it not in the *yoga* also?

Swami Sachidananda Bharathi: Yes, for me this focus was necessary. I follow the Christ-centered meditation. Because of my own personal background, my own experiences are limited to that focus. I do not consider it to be a limitation by itself, but find it a necessity to focus on that. And I suppose, that answers the second question.

Prof N. Mukunda: I have a brief question. In many of the presentations today, speakers have spoken about God, in some form or the other. I betray my own background in asking this question. Is it not possible to live morally, ethically, honestly and socially even without believing in the concept of God? Is such belief essential for living a responsible life? Does the idea of God ultimately not become a psychological support, which a person needs? I agree, many individuals may need such a support. But, can you at least grant that there would be good people who do not need this concept?

Swami Sachidananda Bharathi: I think, the basic concept of God is the point where the problem comes in. When I say about God, I do not mean an outside agency or a name and form as given by some of the religions. Many religions have many gods.

Prof N. Mukunda: But, there is a concept of surrender. Is it to a principle, is it to a spirit, is it to an external agency?

Swami Sachidananda Bharathi: Now, let us go back to science itself. All through you find from the molecule, from the sub-atomic levels, it is always the smaller surrendering to the higher and integrating into or transcending. This is like the process when the proton, the neutron and the electron combine, their individual identities are sacrificed and the identity of the atom takes shape. The atoms join to form the molecule, and the individual identity of each atom is surrendered to the higher identity. So, somehow I see in the whole process, there are integration and surrender that take place. And to me, it is also a spiritual reality of the created world. The force behind this, I would say, is the Divine, or God, if

you want to use the term, or the spirit, the Supreme Spirit—the *Paramatma*.

Swami Atmapriyananda: One statement for Professor Mukunda. Swami Vivekananda clearly stated, mentioning Buddha by name, that Buddha was the greatest spiritual genius who did not have any need for any god or soul, and he said — my religion is 'be good and do good'.

Prof P.K. Mukhopadhyay: Prof Mukunda, you have stated that you betray your condition. May be. You said: Does a person necessarily need the concept of God, or idea of God? Actually, God is not a concept or an idea. God is a reality.

Swami Atmapriyananda: Only for the people who believe.

Prof I.H. Azad Faruqi: God is the spiritual reality. The basic question is: Is there a reality beyond this material world? If you believe in this reality beyond matter, then call it God, call it *Nirvana*, call it anything. So, the basic point between the religious people and the materialists is that, for the materialists the reality, which can be experienced through the senses, is the only reality, there is no reality beyond. The religions, of whatever type they are, believe in some form of spiritual reality, which is beyond the material world.

Coordinator: Many thanks to Swamiji for his beautiful expression.

DISCUSSION ON THE PAPER OF JONATHAN SHEAR

Title: *The Depths of Inner Awareness: Scientific Knowledge and Research Problems — Illustrations from Maharshi's Transcendental Meditation*

Coordinator: *Prof N. Mukunda*

Prof Ralph Abraham: Thank you for such a clear and compassionate report. I have a small point: you might say you have already answered this. In the area of received wisdom, there are many different levels and different schools. Usually, these are of two sorts: the individual consciousness and the cosmic or world consciousness, as Prof. Sharma says, 'microcosmic' and 'macrocosmic'. It seems that in most of the talks we are hearing about microcosmic, and I wonder about these six levels of mind. Can you please say how and where one makes the leap from the micro to the macro?

Prof Jonathan Shear: That is a good question. Actually, it is perhaps the deepest question. I emphasize the micro because I am rather small. And, two things: levels and states. At the deepest level, one experiences this seemingly void, seemingly empty pure consciousness. As that gets stabilized, different states of consciousness emerge. And as you do that, this seems to be associated with an ever-richer glow of bliss and light, things like that. At the highest state of consciousness, one perceives that the same pure consciousness, which is now one's awareness and has been for a long time the context of all one is aware of, is actually also the *ground* of everything. These are the two different states of consciousness, referred to by Maharshi as 'cosmic consciousness' and 'unity consciousness', respectively. If we use the subject-

object language — it is not exactly appropriate, but if we can talk of the expression 'pure consciousness' as referring to a phenomenological 'object' — then the 'object' of this expression is the same in both states (pure consciousness by itself, and the pure consciousness aspect of the state of unity). But, of these two states, only the last one is real enlightenment.

The first of these states is called 'cosmic consciousness' for a variety of reasons — but not in the macrocosmic sense you refer to. For, it is only in the last state (unity) that you actually see that everything outside comes out of *that* in just the same way as your own ego, intellect, thought and so forth come out of it internally. That is how you gain knowledge of its mechanics everywhere, and that the one outside is the same as the one inside.

So, you can have two persons in the state that Maharshi calls 'cosmic consciousness' where each person's consciousness is a sort of cosmic and all-inclusive. You might be in this state, and I might be in it, but are we really experiencing the same consciousness? Someone who believes in the *Vedanta* doctrine will say, "Yes, of course." But, you cannot tell from the experiences themselves. In philosophical language, what both are experiencing as quality-less, is necessarily 'qualitatively' the same, but they could still be 'numerically' different—like two pools of pure water, or two oceans of water (since you have plenty of room for more than one plane of infinity). But, in that other state of consciousness, 'unity consciousness', you *perceive* that, it is the same. That is, of course, the state Maharshi would like everyone to grow to. That is a very deep one.

Prof J.L Shaw: For clarification, I am asking these questions, because there is the mention of TM, Buddhism, Zen Buddhism, and another sect called Hasidism. Regarding the difference between them, TM talks about, as you mentioned, 'pure consciousness'. Traditional Buddhists talk about *vimalajnana* and they try to explain the concept in terms of *alayavijnana* and *pravrittivijnana*. In case of *vimalajnana*, there is no *pravittivijnana*, which means there are no ordinary mental states,

but the series continues and causal law governs the series. So, we can distinguish one stage of mine from your stage, in terms of this series. And, they are not stationary but are in a pure flux. So, this difference remains, and we can draw the distinction between *a* and *b*. But, in the case of TM, phenomenologically, it is not possible to draw the distinction between them because they are stationary, and they are not governed by causal law.

Prof Jonathan Shear: Can I answer this, because I shall not be able to remember more? You are drawing the distinction between the ontology and the phenomenology of TM and traditional Buddhism. My feeling is, there is actually no such distinction here. I talked a little bit with the Lama, Prof S. Rinpoche, about this. You noticed that Prof Rinpoche, when we talked about it, was very careful about it: there is only *one* mind that thinks of *all* individuals. So, depending on your state of consciousness, he, like Zen, only uses 'enlightenment' to refer to the state we are calling 'unity'. He does not talk about the individual 'stream' being annihilated, he uses the term 'emerges' into unboundedness. So, phenomenologically, there is unboundedness which is the same for everyone.But, one can still locate the impulses of both individuals in that unboundedness. I asked him about that when we were standing outside. If you are what he calls a Buddha, if you are enlightened, you can still discern the individuals merged into the unmanifest, if you put your attention on them and know the technique. Maharshi has said about comparable things. And in his lecture, when I asked Prof Rinpoche if, in his understanding, the major traditions of Buddhism, bracketing Therevada as a possible exception, are *phenomenologically* identical, he said, "must be, have to be, definitely", or three such expressions. But *ontologically*, they analyze these in different ways. So, the difference is, at least, asymptomatic or even less.

And, speaking of the different traditions, here is a little book that is coming out, in which almost all of the major traditions of meditation impacting America and the West, with significant people from the traditions writing the chapters from within their own

traditions, according to a format I proposed, about a little of the history of their own tradition, basic mechanics of their technique, basic experiences, more advanced experiences, and further implications where they go into metaphysics. It is called *The Experience of Meditation: Experts Introduce the Major Traditions*. And, the traditions talk about pure consciousness or *shunya* or something comparable, even though the techniques are often hugely different, and the metaphysics, too. Have I answered your question?

Prof N. Mukunda: What is the name of the publisher?

Prof Jonathan Shear: It is the 'Paragon House', and you will be able to get it on Amazon.com.

Prof J.L. Shaw: Just one thing. Zen Buddhism and Hasidism are emphasizing attitude but we should take a neutral attitude.

Prof Jonathan Shear: One thing is practice, another thing is results. So, practices are *very* different. I practised some Zen for years, I enjoy doing some qigong, you guys see me out there doing some taiji. And, there is *hatha-yoga*. There are many practices, many attitudes. And, as you will see at the beginning of the book, some use intellect, some use body, some use breath, some use subtle body feelings, subtle energy. Some use feelings and emotions, some concentrate, some completely relax. Huge spectrum of techniques. There we have enormous diversity. But, it is my opinion — and I am happy to see, it was Prof Rinpoche's opinion, too, because especially my Buddhist friends in America argue with me about this — that ultimately they should be the same phenomenologically.

Even if there are lots of differences, the areas in which they are the same, are the ones that the whole planet's hearts are crying for, but do not know about.

Prof I. H. Azad Faruqi: Although I cannot claim to have understood all that you have said, but at least, this much I gather that you have talked about the experiences of consciousness of

various kinds. My question is this: Is the experience of consciousness, unboundedness, emptiness, or fullness, the goal in itself, or is it the preparation for some other goal? Let me explain it. For example, long ago I read Patanjali's *yogasutra*. There I found the purpose of *yogic* exercise and the higher level of meditation, is to make the consciousness still, so that the *Purusha* can be reflected in it. Also, for example, in the Sufi meditation, the purpose is, through that experience, the realization of God, or, you can say in a metaphorical language, seeing God, meeting God, or uniting with God, not in a physical sense. The purpose of meditation and training of consciousness is to realize God, in the Sufi tradition. In that way, in the TM practice or tradition of meditation, is the experience of unbounded consciousness a goal in itself, or is it leading to some other higher level?

Prof Jonathan Shear: It is a wonderful question. I am going to do something that will sound like a trick first, and then I will give a more sensible answer. The part that sounds like a trick is that, there is no goal in the TM practice. It is simply a practice. *People* may have goals; the technique is just a technique. Now, as one, in Maharshi's language, 'evolves', one's goals change. I myself never had the slightest desire for any religious experiences. I wanted enlightenment. I read the Zen tradition, and said, "Ah, man, this sounds great!" I never wanted to be 'sensitive' and 'subtle'. I was a gross American; it was not interesting to me. Inevitably, however, these things start to develop. So, the *practice* has no goal, in one sense.

Now, I shall change the answer. The experience of pure consciousness is not the goal. For people in some meditation traditions, perhaps it is the goal, since for most traditions it is reportedly difficult to get. In TM, it is not the goal at all. Getting it and having it stabilized is instead the basis for real growth. It is like in the martial arts, people might aspire to get a 'black belt'! But, what does it mean to get a 'black belt'? In Judo, which originated the belt system, and within the martial arts community in general, it means you are now competent to start learning. So, having pure

consciousness stabilized, unbounded in oneself, is the platform for growth. Now, the natural growth for anyone who understands the picture, who has a more expanded vision than I did when I started, experiencing God is possible. Maharshi refers to 'shaking hands with God'—coming from *His* side, rather than from one's own side—this is possible in the third of the four higher states of consciousness. And then, the fourth is that unity state. And, both of these are talked about by different Sufi masters.

And now, I shall say one more thing about what I myself consider 'the bottom line'. Maharshi says, "The purpose of life is the expansion of happiness." Any goal we have which is not a crazy goal, I think, connects my happiness, your happiness, collective happiness, the happiness of all life. So, that is the goal of life. Ultimately, the goal can be complete only when there is absolute bliss everywhere. The *Mahayana* vow is: I will enter the final *samadhi* (*nirvana*), I will go into the final step of enlightenment, only when everyone I meet is enlightened. It is the absolute mechanics of pure compassion. It is a vow for them. However, as I understand it, when you are in that fully enlightened state, everyone else is fully enlightened, but they do not yet notice it.

So, in terms of the earlier question, it is the same pure consciousness, but *what* one notices depends on the refinement of one's perception. Maharshi says that is why it is called *awakening*. What one is aware of has not changed, only one's awareness of it has changed. So, all the goals you mentioned are natural in this path. But, if I want everyone to enjoy meditation, and say, "Oh no, you have to experience God. you have to become infinite and unbounded.", who is going to listen to? But, if you say, "Oh, life is going to be so much better.", somebody may listen.

Once, in a little town where I was teaching, somebody asked an older friend who was already meditating, "Is this meditation really worth this fee?" And, her friend said, "Ask me how much *I* think it is worth?" So she asked, "How much?" And, her friend replied, "You could not pay me enough to get me not to meditate! There is no way!" This answer stuck with me ever since. If people

get a sense that it is worth more than all these ordinary things that money can buy, it is like looking at the sunset, to have a sense of fulfilment. I think, this is the message for the world. If you tell children, "No, you are not going to want to take your car and go, rmm-rmm!" or "Play with your dolly when you are older.", you will destroy their growth. They have to grow naturally like that. It is the same with us.

There are other deeper goals. But, if someone does not have them, it does not matter.

DISCUSSION ON THE PAPER OF NILANJANA SANYAL

Title: *Consciousness of the Self: The Only Path to Spiritual Serenity*

Coordinator: *Prof N. Mukunda*

Coordinator: Thank you, Prof Sanyal, for a very learned presentation. I have to say something about compassion. Coordinator's compassion means no time for discussion, or less time for discussion. But, let us have a brief discussion and I invite you to ask the questions.

Prof Krishna Roy: I need some clarifications. You mentioned about phenomenology repeatedly and I would like to know — has Husserl, the main phenomenologist, admitted anywhere about pre-reflective consciousness? To my knowledge, in pre-reflective consciousness, the distinction between pre-reflective stage and reflective stage is present only in being and nothing else. But my question is, you mentioned about self-awareness in the pre-reflective state. But Sartre, in his 'Transcendence of the Ego', the small book, has denied that the self is present in the pre-reflective state. It is present in the reflective stage. So, I would like to know your opinion regarding this distinction, whether you believe that even in the pre-reflective stage, it is present or not. You mentioned about pre-reflective self-awareness, but as far my understanding of Sartre goes, the concept of self comes in the reflective stage and not in the pre-reflective stage.

Prof Nilanjana Sanyal: If we believe that consciousness comes only in the pre-reflective state, in that situation, what Prof Shear mentions — cosmic consciousness and the sense of bliss that is there which makes one to have a feeling around the whole cosmos, being identified with the whole cosmos, would not fit into the picture. Through the pre-reflective consciousness, I definitely

touched upon Jung's concept of 'Collective Unconscious'. In collective unconscious, the particular archetypes that he talks about, are basically accepted as mythological motives. The primordial thought-contents are there in us, I believe, in the pre-existed form which creates a pre-disposition on the part of a single personality depending upon the kind of exposures one has in the outside life. Due to the combination of these pre-existent collective contents together with the exposed contents derived from the outside, the ultimate realm of one's consciousness develops.

Coordinator: On behalf of all of us, I would like to request Prof Mukhopadhyaya to ask his question to Prof Shear. We may hear the answer afterwards.

Prof P.K. Mukhopadhyayay: I would like to relate the two presenters in one question, that I will ask. One thing is this, both in the tradition of *Vedanta* in which TM comes, and the presentation of the psychological perspective that has been given, one common point is this, that there is no acceptance of the substantive self, over and above consciousness. Consciousness itself is a self-subsisting reality. It does not need a location and extra entity to reside in, i.e., ownership of consciousness is denied in both these traditions. I belong to a tradition where ownership of consciousness is a must. From this point of view, I want to ask just one question to Prof Shear. Pure consciousness, higher levels of consciousness are weird expressions for me. We can have levels of realization, but consciousness itself can have no levels.

Prof Anjali Mookerjee: It relates to your question of yesterday. That is: Can a person without believing in God, become a good person? What I was thinking about consciousness, bliss and feelings is that, these are, more or less, individualistic. I am trying to bring myself up to a certain level. For the general mass, probably this approach is not possible. But, everyone can strive to be a good person without believing in God or anything, but with good work, good deed, fellow-feeling and love. So, my contention is, may be, this kind of bliss and other things are for intellectuals, for people of higher level; and for common people, it is much better to follow Prof Mukunda's theory.

DISCUSSION ON THE PAPER OF P.K. MUKHOPADHYAY

Title: *On the Seat of Consciousness*

Coordinator: *Prof Ramaranjan Mukherji*

Coordinator: Thank you very much, Prof Mukhopadhyay, for your fascinating presentation. The paper is now thrown open for discussion.

An audience: Prof Mukhopadhyay, I am telling you one of the two things. First of all, in science, one of the problems of looking at the evidence is to get the methodology. In recent communications in science, you will find that people have discovered that gene expressions can be regulated by thought, of course, only in a few cases. So, evidences are there and they are accumulating. In the last part of his life, F.H.C. Crick, who worked with J. Watson and jointly discovered the DNA, worked on neuroscience and consciousness. In his last paper in 2001 on Nature, he could not show the seat of consciousness. He was sure that one part of the brain is responsible for it, but could not give an evidence. The thing is, in case of the scientific theory, to give a theory, you need some evidences of the theory. Sometimes, it is very difficult to give an evidence. Consciousness is one of the subjects where the evidences, the experimental tools and the methodology are very weak. It is true, we could not develop it yet. My only point to you is, if you think that *Nyaya* is in a position to explain causality as well as the reason of consciousness, then *Nyaya* itself is a science.

Prof P.K. Mukhopadhyay: I would accept it as a compliment to the *Naiyayikas*, but there is a slight difference. If the compliment is offered in the spirit of cooperation, it is acceptable; but if it is offered from a higher seat, it is unacceptable. The point is this, it is

very tricky to decide exactly where we are in the want of evidence and where we have evidence. The reason is this, what would constitute sufficient evidence for a particular theorem to be established, is not as clear in physical sciences as in mathematics. So here, unless the question itself is clear, how can we be very sure that here is an evidence and there is none. I admit that everyday tremendous progress is being made and many more evidences are being collected and there is a great hope that it will be possible for us to explain that causality works from the other side also. Yet, we do not know what would constitute sufficient evidence and that prevents us from accepting the evidence already collected to be sufficient, so that we can say that there is enough evidence to suggest that the mind interacts with the body. Somehow, there is a bias on the part of the scientists. We have been born and bred in such a theoretical framework that it is not easy to come out of it, without feeling very sure that, where they are going, is a very definite field. So, I quite understand and have all sympathy if the scientists are cautious. Prof Mukunda is very cautious. He is an example for me. He is as cautious as a *Naiyayika* is.

Prof Jonathan Shear: This is an interesting question. Figuring out for two-way causation what could constitute evidence. A standard, simple method is used in science — you look at the different outcomes when you have the presence or absence of a given variable. So far however, it does not seem apparent and some would say even possible, to detect even the presence or absence of an independent variable called mind. I have a friend who is a psychoanalyst and psychotherapist. He publishes well received stuffs on obsession-compulsive disorder. He claims that some of his work really provides good, strong evidence for free will, downward causality. Yet, when I look at all the things that he has, I find that it is simply circular, because he cannot show that all the things that the person reports he is causing, his decisions and so forth, are not the products of the nervous system, and that his own consciousness is not simply an epiphenomenon. Not that I believe these alternatives. But, his approach cannot show they

are false. Here is your philosophical analysis; it helps to focus on a given variable. How do we determine the presence or absence of mind as distinguished from matter? If we cannot do that, then it will appear on surface to be very difficult to get the two-way causality.

Prof P.K. Mukhopadhyay: I never say that there is no difficulty. There are many more fields where this difficulty is felt. This question was raised and answered. I shall point out one such, right now. But firstly, I would like to tell you that, whenever I offer someone an instance of downward causality, he will always try to and prefer to explain it in some other way. So, that is actually already rooted in that particular system or theory, a perspective from which they will try to explain it. It is quite natural. But, if you do not allow the other possibility, you can never come out of it. So, this is one thing. The second point is this: particularly you should know better that there are evidences where we can get mind independently, or largely independently, of matter. The thing which was causing most of the trouble is that, we think that we cannot get it. Yes, we can get it. Particularly, we have been talking about it for such a long time; we have different states of ('state' is not an acceptable word for me) consciousness — the waking experience, the dream experience and also from the *Vedanta* point of view, the dreamless or sleep consciousness. Now, nobody can say that in dreamless sleep consciousness, we are not getting mind independent of the body. Here is a possibility. Several questions have been raised in *Nyaya*. It says that we define causality. If we define causality as having agreement in presence and absence, then obviously, we are moving in a circle. We have a different notion of causality. We say, *purvavrittitva* — that is causality, the regular antecedence. Of course, the word 'regular' is there, that is to be detected. But I say that, there are different ways, we have to try.

Coordinator: After listening to the presentation of Dr PK Mukhopadhyay and the questions, I think that more dialogue should

be arranged between the *Naiyayikas* and the modern scientists, so that many concepts can be cleared. Actually, Pradyot, you may remember that we once tried to organize this sort of dialogue. One was held at the Jadavpur University and the other one was held at the University of Rajasthan. But the difficulty is that, most of the scientists are unable to express their concepts through Sanskrit and the traditional scholars have no command over English idioms and expressions. So, we had to take the help of Pradyot, who has thorough command over both the languages. But, many Pradyots are not there in the country, so we could not organize much dialogues. But Swamiji, you have to organize these dialogues between the *Naiyayikas* and the modern scientists and technologists. Now, the time for this presentation and discussion is over. Members who are sitting and watching on television are requested, if they have any questions, to write down and put it in the box over there. Thank you.

DISCUSSION ON THE PAPER OF RALPH ABRAHAM

Title: *Vibrations and Forms*

Coordinator: *Dr Ramaranjan Mukherji*

Coordinator: Thank you very much, Prof Abraham. Now, the paper is thrown open to discussion.

Prof I.H. Azad Faruqi: You mentioned about Pythagoras. Later, in the Hellenic period, this school was revived by the Middle Eastern philosophers, in Egypt and Syria. And from there, it passed on to the Arabic culture and civilization. There was a secret society in the 10th century A.D. based in Basra, in Iraq. The members were called *Ikhwanas Saffa* — the brethren of purity. They secretly met and discussed, because they wanted to have the search for truth without any preconditions. Probably, they thought that it would not be liked by the society; so they met secretly. They had produced some 52 pamphlets in which a major portion is on Neo-Platonism and Neo-Pythogorianism. These were published in Arabic and I saw some of those in my University, also. I am unable to understand that philosophy. But, it is true of that philosophy that it considers mathematics to be the key to open the secrets of the universe. They have strange notions about numbers, etc. For example, for qualities, they put the number 1. Similarly, 7 stands for strange kind of sciences. They are no longer popular but we have its repercussions in Kabbalah and Islamic traditions also. For example, 786 is the number of *Bismillah-e-rahman-e-rahim*. Again, there is *Ilm-e-jafar* or *Ilm-e-ramal* which are related to Neo-Pythogorianism. I wonder, if you can explain more clearly — how mathematics can be an opener of the secrets.

Coordinator: Prof Abraham, let us have all the questions first. Yes, Prof Mookerjee.

Prof Anjali Mookerjee: I am not going to ask any question, but to present a comment. I listened to Prof Prigogine's lectures in which, 'pattern formation' was the main theme. Have you heard him speak? So, is there any similarity in your thought process and his?

Prof Ralph Abraham: Yes.

Swami Sarvapriyananda: My question is distantly related to Prof Faruqi's question. Some of the mathematicians I have met seem to share a belief in the Platonic world of mathematics — mathematical entities. Do you share that belief? And if so, have your experiments with psychedellic substances led you to have some direct intuition of this Platonic world of mathematical entities? Thank you.

Coordinator: Now, Mr. J.L. Shaw, your question, please.

Prof J.L. Shaw: Now, my question is about the correlation between vibrations and forms. Is it a causal relation or, is it similar to the sense and reference relation? Is it that they refer to the same thing, but have different connotations like identity thesis? Identity thesis claims that the mental state and the neural state refer to the same thing, i.e., the firing of neurons; that is identity. But, if we have the sense reference distinction, then there is a correlation but not a causal relation. So, there is the relation, which is neither causal nor correlation, but at the same time, there is the sense reference type of distinction, so that everything corresponds to or refers to some neurons. But, all the mental states are related to different layers of consciousness, as sense is related to reference.

Coordinator: Sir, this is not a question, this is a comment. We have two questions, one by Prof Mookerjee and another by the Vice-Principal. Sir, you have to answer very briefly, these two questions. The third one is a comment.

Prof Ralph Abraham: I am not very familiar with the 'Brethren of Truth' and I would really like to see the English translations of those writings. As for Prigogine, I know his works. He is a follower of the great pioneer in the field of biological morphogenesis. He is

Alan Turing. Alan Turing is famous as a mathematician and also as a computer scientist. He did his experiments in 1952 to show that the diffusion of morphogens, the so called biochemical substances in plants, produce fibre-taxes, that is to say, patterns of pineapples and so on. This work of Turing stimulated Prigogine and many other people and is in direct line of my own work. So, I greatly support the ideas of Prigogine — of being and becoming, chaos and order and so on. This is an important work and controversial as well, because, somehow, scientists have a lot of trouble in accepting his winning the Nobel Prize, because it was expressed in a complicated way. As for the Platonic universe of forms, I think, this idea cannot be supported in any logical way. I have to confess that I do not believe in anything. I am not a believer by personality type, but I do take all things seriously. I operate as if Plato was right. I had a great argument with my friend, because he thinks, there is no Platonic universe of form, and no mathematics is evolving in the minds of people. As for vibrating forms and causal relationship and so on, it is a little more complicated and I do not have time to go into this. There is geometry in the mathematical model for the relationship between the vibration and the form. So let us say, I have a sign wave generated. I have two knobs — one for the volume and the other for the frequency and then I turn these knobs to a certain volume and frequency, and I see a certain corresponding form created in water that seems like cause and effect. But, no; if I turn the knobs in a different way to reproduce the very same values with different history, then we will get different forms. So, the causal relationship is complexified by a kind of geometry that constitutes the main work of the French Professor of mathematics under the name, Catastrophy Theory. He had explained a universal archetype of casuality, ways of achieving certain effects with different causes.

DISCUSSION ON THE PAPER OF M.S. VALIATHAN

Title: *Consciousness in the Indian Medical Tradition*

Coordinator: *Prof Samir Bhattacharya*

Coordinator: First of all, Prof Valiathan, you are not an ordinary scientist, but a great scientist. Whatever you have said about Charaka, Shushruta, consciousness, the withdrawal of the mind from the senses and about Bose's experiences show that everywhere there is some consciousness. I think, there will be a very interesting discussion followed by his lecture. Yes, Swamiji, you start, please.

Swami Sachidananda Bharathi: I am quite aware of JC Bose's experiment. I did some study on that, because it appealed to me very much. One of my friends was responsible for this. He demonstrated to me that plants respond to love and if you curse a plant in a pot, continuously for a few days, it will dry up. Then, he told me about these experiments of Bose. I think, it is very important to bring to the limelight the experiments talked about.

Dr M.S. Valiathan: Thank you.

Prof Krishna Roy: I would like to know something about the seat of consciousness. You mentioned that Charaka mentions that the heart is the seat of consciousness and the *Veda* mentions, the brain. We know that long ago Descartes also mentioned about the pineal gland. The pineal gland is still being mentioned in Gray's Anatomy. So, as you are a cardiac surgeon, I would like to know from you, what according to you should be the possible seat of consciousness – heart or brain?

Dr M.S. Valiathan: When I came for this seminar, a few years ago, for the first session here, I had made my views very clear. I

have never understood it, because I do not know the official definition of consciousness. One of the first experiments we do is, we take a single cell, an amoeba, and put a substance, a drop of a food material. What we see is that, it sends the pseudopodia, the false legs which engulf and swallow it. That is how it eats. But, if you put a drop of poison, it would not do that. But, nobody says that the amoeba has consciousness. It is able to distinguish what is safe from what is not. To me, that is an attribute of consciousness, but nobody accepts that. Then, let us take Sherrington's great work on reflexes. He creates an animal called the spinal animal, which at the level of oblongata of the brain, is cut off. But, that animal can be kept alive, only living under the spinal cord. What happens is, if you take a pin and prick it on its leg, that leg would be withdrawn. If you try to topple it, it will come back straight, by reflex. But, you never say that the spinal animal is conscious. I do not see — why not? And, later on, we got into instrumentation — electro encephalography, a series of imaging systems — CT scan, MRI, electro-magnetography and so on. Now, everywhere we seem to think that we are finding consciousness. In fact, when I was in the final year, Prof Penfield came to India. At that time, he was known for the localization of consciousness. It was a very exciting work. We, the medical students thought that we found everything. But, now we know that, it is just a partial answer to the question. I have seen for the last forty years that this is going on and on. That is the conventional way of trying to locate it in the pineal gland, despite Descartes or heart, despite Charaka. I do not think, we are going to find a location or organ like this. We have to have a different perception of the whole thing. Someone says, we should look at metals, plants, animals, every cell. I think we have to have a larger vision. We have to break out of this compartment thinking, compartments not only in terms of the body, compartments in terms of discipline. Today, we have heard all about philosophy or about science. With that compartmentalization, we will not get to understand what is consciousness. So, I cannot locate it in any organ.

Prof Jonathan Shear: It is a very interesting question to me. I spent a long time watching amoebas and other little beings. It certainly looks conscious. Any child looking at it will call it conscious. Let us say, I accept the apparent content of the experiment and you can find consciousness anywhere and everywhere. Still, there is a separate interesting notion of the seat of consciousness. To me, the ultimate compartmentalization is the most difficult thing to understand, experientially. Each one of us, at least most of us, feel we are individuals. So, when I say about the seat of consciousness, where is that consciousness that seems to be 'I', that is integrating these experiences? Even if I hold that red blood cells or amoeba are conscious inside, we still do not know where is the seat of consciousness. Where is it located? Would Charaka respond to the contemporary heart transplant? When you take the heart out, the person is on the heart-lung machine—even though he is talking, you do not see the individual's seat of consciousness. I know that people are saying, "Oh, it is in the heart." That is the gross physical heart.

Dr M.S. Valiathan: I think, the example of the single cell organism, like the amoeba, which I gave, is my own non-expert way of thinking. To me, if that is a purposeful response or the lack of it, if that is consciousness, then there is the difficulty in imagining a mammalian cell not having consciousness and there are billions of them. Naturally, they should submit to produce what we call consciousness. Summate means a number of responses joined together. Now, summate is possible. So, location of consciousness in a particular organ would be difficult. The heart is a mechanical pump, an absolutely marvellous pump. It has a nervous system, controlling it. But, it does not depend on the nervous system. Like, when you do a transplant, you take it out from a donor, you put it in the recipient. All the nervous connections are gone, but it still functions very well. So, it has got so many other redundant mechanisms, that even if the nerves are cut off, it still keeps working.

Prof Krishna Roy: But, sir, during the operation you have to use anesthesia and that certainly affects the brain.

Dr M.S. Valiathan: Yes, yes.

Prof Krishna Roy: So, somehow, the brain is related to consciousness. Can we say that?

Dr M.S. Valiathan: Yes. I said that we should not limit consciousness to brain alone.

Prof P.K. Mukhopadhayay: I have a number of things to tell you; to begin with the last. I found one thing missing in your presentation and that is the concept of *prana*, though I fully agree with you. As I told you, there is also a division between the physical and the mental, we go by that. Within the physical, Bose was very careful in showing the organic and inorganic divisions. This inorganic-organic division is not conscious-unconscious division. It is a division between *saprana* and *nishprana*. So, from that point of view, *prana* is a different concept and that has to be brought in somewhere even consistent with *Charakasamhita*. Since they have the idea of *vayu*, the concept of *prana* is to be incorporated. The second thing is that, I draw your attention to the concept of *hridaya*, heart. What is considered as heart, that also is ambiguous in the sense, the *yogi* does not locate *hridaya* in the place, where we people do. Whenever we talk of *hridaya*, we just locate it in chest. But, there is a tradition to put it elsewhere. So, that sort of division is also there. And, the third thing that I wanted to tell you, is about your idea. It is a very correct observation—that all these ideas were there, even before we systematized them in forms of schools. But still, when we find, in *Charakasamhita*, the úse of the words *dravya* and *guna*, that *dravya* and *guna* are not the *dravya* and *guna* of *Samkhya*. Sometimes it is *Samkhya guna*, sometimes it is *Vaisheshika guna*. So, it seems that they have drawn ideas from two different traditions, though we have never studied whether there is a perfect compatibility between the two or not. One possibility is that, they are equivalent descriptions. What we describe in terms of *Vaisheshika guna*, we can describe in terms of *Samkhya guna*. But, it is very difficult. Anyway, there is the evidence that, it has drawn from both the traditions.

Dr M.S. Valiathan: Of the points, may I respond to the heart? The description is very clear that the heart is shaped like a lotus bud, facing downwards. So, the description about the heart and the location is clear. There is no question of confusion regarding the anatomical description given by Charaka, as well as, Shushruta. They all repeatedly mentioned emotions, consciousness and that the location of these is *hridaya*. About the question of *prana*, many of you know that our *Ayurvedic* forefathers were obsessed with the idea of the homology between microcosm and macrocosm. Whatever is in the universe is also present in the body, and whatever is present in the body is also present in the universe. So, man is nothing but a cosmic resonator. This was a concept which dominated their thinking. For example, *vayu* was the most powerful thing and the equivalent of it in the body is the *prana*. So, it is there. I do not want to get into the *panchabhuta* doctrine. But, it is certainly there.

Prof A.K. Sharma: Prof Valiathan, you were mentioning unicellular organisms, and particularly the needle system. I was wondering that, in such cases, it made a reflex action. Is that reflex action guided by consciousness? Is there a straight reflex action or an effect of consciousness?

Dr M.S. Valiathan: See, Prof Sharma, I also have been taught that it is a reflex action. That means that there is no thinking involved, no consciousness involved. That is what we have been taught, all along. But, I begin to doubt this. Are we really facing the issue? Who decides whether it is a reflex or not and whether consciousness is involved in that or not? Because, when you put a poisonous substance, the amoeba does not engulf it. So, that requires some discrimination. I do not know whether it is a reflex or not. But, it is a matter which deserves to be rethought.

Prof Anjali Mookerjee: It is not really a question. About engulfing the poison by the amoeba, could it not be the membrane protein which accepts the food and rejects the poison?

Dr M.S. Valiathan: That is only a mechanism — how it is happening.

Prof Anjali Mookerjee: Why not put it as just mechanical?

Dr M.S. Valiathan: This is the reflex mechanism. In the case of a spinal animal, it has only the spinal cord. It does not have a brain, but if you try to topple it, it immediately straightens itself. It is doing all kinds of purposeful activities. So, can we really say that it is not conscious? We need to break out of the way we have been taught, the conventional way of teaching biology. That is the only way we can move forward for understanding consciousness.

Coordinator: Prof Valiathan, let me tell you — this amoeba can discriminate. That is the most important thing. It can discriminate between the poison and the food. Now, we know about the lower organism like caenorhabditis elegans, which is a worm. Majority of its genes are homologous to that of the human being. All these genes, now we are working on, are actually of the caenorhabditis elegans. So, you cannot tell that they have a discriminatory system, they have consciousness of the gene system. It is very difficult at this stage now, when you know that homologous genes evolved equally even in the case of the worm.

DISCUSSION ON THE PAPER OF DEBABRATA SEN SHARMA

Title: *Consciousness as Revealed to the Seekers of Spiritual Truth*

Coordinator: *Prof Samir Bhattacharya*

Coordinator: Since time has gone out, may be, only one question can be asked.

Subrata Ganguly: Prof SenSharma, would you shed light on the relationship between existence and consciousness? The two – whether they are co-existent, whether they are born together, whether one depends on the substrate, the implications are fairly obvious. If consciousness precedes existence, then all the talk about localizing it, trying to feel it and describing it, does not have much meaning. On the other hand, if existence precedes consciousness, then I think, we should talk of the substratum and if they exist together, then we cannot understand the one without the other. What are your comments on the relationship between the two?

Prof Debabrata Sen Sharma: The *Upanishads* very clearly state that consciousness is of the nature of *sat, chit,* and *ananda. Sat* means being or existence, *chit* means knowledge and *ananda* means bliss. These are the three aspects of consciousness. Consciousness is coexistent with these. It is one of the descriptions of *chaitanya* found in the *Upanishads* and almost all schools of Indian philosophical thought believe in that.

Coordinator: Another short question, very short.

An audience: Is there a special reason for not mentioning the *pratyavijna* conception of *chaitanya*? It is a pretty unique concept in the Indian system. It considers *chaitanya* as *upadana karana*, which is not present in any other system and its explanation is

simple, because it explains consciousness in terms of *upadana karana* and knowables.

Prof Debabrata Sen Sharma: Well, today I have chosen only the *Upanishads*, because my emphasis was on *shruti*, and *pratyavijna* is not *shruti*. I can quote many passages from *pratyavijna*, which also describe the experiences of the same kind. I have chosen it, as it is revealed to sages and seers in the *Vedic* tradition. That was the title of my paper.

Prof I.H. Azad Faruqi: You mentioned that consciousness or self is revealed to him, whom it chooses. Can you explain that?

Prof Debabrata Sen Sharma: Yes. Consciousness is ready to reveal itself to all, provided you have the capacity to see it, to experience it. You have to develop the capacity to experience it. Consciousness is self-effulgent, it is always self-revealed. It is ready to reveal, but we are not ready to see it.

Prof Mukunda: It is connected with the question asked just now. Some of the earlier statements you made seemed to me that they rule out the possibility of a deeper scientific search of consciousness. Is that so, or is it possible to study it with some degree of objectivity?

Prof Debabrata Sen Sharma: Well, we have a different notion of science. To us, science is *vijnana*. *Vijnana* is *vishesha jnana*, which is based on experience, which is also observation, not as an object but as a subject. So, we also call it *vijnana*.

Coordinator: Thank you, Prof SenSharma. Prof GovindaGopal Mukhopadhyaya will ask something.

MM Dr Govinda Gopal Mukhopadhyaya: Your illuminating talk has made many things clear to all of us. But, I am still in a puzzle. Why does the *Vedanta* use the word '*chit*' and Kashmir Shaivism or *pratyavijna*, all the time use the feminine term '*chiti*'? Curiously enough, I have found even in the *yogasutra*, not in the *sutra* but the *vyasabhashya*: *chitiśhaktiraparinaminya-pritsankrama darshitavishaya ananta* and so on; so there also

comes, again and again, the word '*chitishakti*'. So, is it a feminine thing or something else, which is neutral, that is, *kliva*? If you kindly enlighten us, because we would not get a scholar like you, very often. I want this to be clarified. Why has it been used as *chiti* and also as *chit*?

Prof Debabrata Sen Sharma: Well, in Kashmir Shaivism, consciousness is conceived as *chiti – chaitanya* with *shakti*. *Chit* with *shakti*. *Shakti* cannot be separated, even conceptually, from *chit*. There are two aspects — the static aspect and the dynamic aspect. These two represent the two faces of the same reality. Consciousness has both a static side and a dynamic side. And, it is a fusion of these two. Therefore, they use this word. They have given emphasis on the *shakti* aspect of it. Therefore, they always say that *chaitanya* is *chiti*.

MM Dr Govinda Gopal Mukhopadhyaya: And, one more point rang in my mind, again and again. If that *chit* or *chiti*, whatever you call it, is illumination, knowledge, then how that knowledge puts illusion in man? *Saisha prasanna varada nrinam bhavati muktaye*, as the *Durga Saptashati* says, '*samsarabandhahetushcha saiva sarveshvareshvari*'. How does this happen? If it is illumination, if it is knowledge, if it is *chiti*, then *chiti* is at the root of all bondage and all troubles. And, we are here, in this Seminar, to find out what is the nature of that consciousness.

Prof Debabrata Sen Sharma: The illusion has also been created by *chiti*, because it hides its own nature to reveal its nature. This is also a play – *lila*. We call the ultimate reality *Paramashiva* or *Parameshvara*.

MM Dr Govinda Gopal Mukhopadhyaya: If there is *lila*, can there be freedom? She does whatever she likes.

Prof Debabrata Sen Sharma: It is not caprice. It is a part of freedom. It assumes limitations.

MM Dr GovindaGopal Mukhopadhyaya: And, we are suffering for that freedom. Prabhanandaji is very eager to find the nature of consciousness. But, how can consciousness flow?

Prof Debabrata Sen Sharma: Grace, grace.

An audience: I think, the key to understand consciousness is that, we have to go beyond *vidya* and *avidya*, beyond good and evil, and then only we will go to the root of consciousness. But, we are hopelessly caught in the *vidya-avidya* complex.

Swami Atmapriyananda: There is a similar statement in the *Kathamrita*, exactly similar to this statement. "We are suffering. It is God's play, but we are suffering." Sri Ramakrishna asked, "Who are you?"

Prof Debabrata Sen Sharma: Yes, it is a part of the game. It is *lila* from His point of view. We are suffering because we do not understand the *lila* that He is playing.

Swami Atmapriyananda: God does not want us to play the game.

Prof Debabrata Sen Sharma: Yes, from that also, He derives pleasure, He derives bliss.

Swami Atmapriyananda: Is it *swagata bheda*?

Prof Debabrata Sen Sharma: It is not *swagata bheda*. In Kashmir Shaivism, they say that the Supreme Lord is endowed with infinite power and also a will. So, out of His sheer will, He chooses to do this *lila*, in order to experience that, which was inside Him. When He is immersed in His true nature, He wants to see the same *lila* outside also, *ananda* outside also.

Coordinator: No one can regulate this will, right!

Prof Debabrata Sen Sharma: No, no. He is called Nataraja.

Coordinator: Prof Sharma, your talk is so exciting. I imagine, there would be more questions, but we have no time for that.

DISCUSSION ON THE PAPER OF KIREET JOSHI

Title: *Explorations in Consciousness and Inevitable Relevance of Yoga*

Coordinator: *Prof S. P. Mukherjee*

Prof S.P. Mukherjee: Thank you very much, Prof. Joshi for your extremely erudite exposition of different forms, facets and levels of consciousness. Prof. Joshi took us to the very fundamental aspects of consciousness and exciting phenomenological and the *Vedic* approach to consciousness. He even raised the question of verifiability of consciousness through science and said that we should not limit ourselves to physical verifiability and that we can talk of verifiability in terms of intuitive experiences. He talked about the need for a methodized effort to experience consciousness, verification of intuitive steps by experiences and he also referred to *yogic* processes. He definitely opened up a new vista about ways to understand and explore consciousness. We have learned a lot from his exposition and I am sure, something new has come from it and that, we can learn some more from him. So, questions may be raised by the participants on this paper.

Prof Krishna Roy: May I take this opportunity to ask a question which may seem to you very naïve, but is very important to me? I would like to know — you mentioned about spiritual experiences and we often hear about spiritual consciousness like moral consciousness and aesthetic consciousness — but sometimes it puzzles me. What actually we mean by spiritual consciousness? I would like to ask you another question. You mentioned that it is necessary to demonstrate and communicate those spiritual experiences in order to have a scientific treatment. I think, it is

also necessary to have some commonality, because in these last two days, we have been hearing about different experiences of different traditions. We have heard of Kabbalah tradition, Kriya-yoga tradition, Sufi tradition and so on. There must be something common which may be regarded as spiritual, so that we can start from that level. What is your opinion regarding that?

Prof Kireet Joshi: One word which can be used is that, the determining point is mental consciousness. Anything by which you can go deeper than mental consciousness, or higher than mental consciousness, can be defined as spiritual. As long as one remains at the level of the mind, it is not spiritual. It is only when you claim that you have gone beyond the mind, and experienced something that belongs to a realm which is higher than the mind, or deeper than the mind, then that is spiritual. Any contact with that state of consciousness is spiritual. Any aspiration to reach that is also spiritual, you might say. I may not have reached that stage as yet, but the moment I begin to aspire that I want to achieve what Buddha had achieved, then that aspiration is spiritual. Any effort that you make in that direction is also spiritual. Any methodized effort you undertake is also spiritual, provided that the aim is to attain that state of consciousness.

For example, Dr. Mukanda was saying the other day about morality: Suppose that I am absolutely moral, then what is the need of God? Is it necessary at all? Now, according to all those who have undergone spiritual experiences, the answer is, 'Yes'.

You might take, for example, the experiences of Arjuna. He was a highly moral being, utterly moral. He wanted to be absolutely faultless in his action and that is why, in the battlefield, when the question of morality came up sharply in his consciousness, he said: I examine everything from the point of my morality, and I feel, the answer is — I must run away from this field. '*Ghoram karma idam*' — this is a terrible action. And, my morality does not allow me to stay here.

And yet, he was not sure of what is right. One might say that the relevance of the *Gita* is exactly at this point. You do not arrive at the point of equilibrium in the moral state of consciousness.

Even if you try your very best, you are still not sure whether you are right or wrong. If you are not sure, you still have to move forward. That is why there is the necessity of the spiritual solution to the problem. That is why Sri Krishna's very first answer is very significant. He does not answer the question of this or that. He says, those who are wise will speak of what is immortal. He does not listen to any argument at all. He is very fast. He is like a dong in a debate. He simply says: you argue saying all these things, how shall I fight with my brothers, I do not want kingdom, I do not want happiness, and so on. Sri Krishna does not give answers to these questions or arguments at all. He says instead that, the starting point of all arguments should be 'immortal'. Those who are wise, they do not worry about those who are gone or those who are not gone. They speak only about immortality. Unless you bring that as the first premise, your moral problem will not be resolved. This is the distinction between the highest moral aesthetic or rational consciousness and the spiritual consciousness. You can read those points but they do not take you to equilibrium. And, there the whole problem lies. If you could reach the equilibrium in moral consciousness, aesthetic consciousness, or rational consciousness, nobody would go beyond and there is no need to go beyond. And, that which takes you beyond that, is spiritual.

Swami Sachidananda Bharathi: My difficulty is regarding the 'descent of the supramental consciousness', as the Mother spoke about it. As I understand, from the evolutionary process, consciousness expands from the physical to the mental, from the mental to the supramental spiritual. So, it is the experience of expanding consciousness. When you say, 'supramental consciousness descending on earth', can you explain that? What exactly does that mean?

Prof Kireet Joshi: For example, there is a difference between an idea which I have just read about and an idea on which I have thought about so much, and then an idea which I have practised hundreds of times, over and over, again and again. I had a long talk with Dalai Lama at one time in 1973, when I had the privilege of

taking him to the Mother. When he met the Mother, the Mother made a remark which was extremely important. Dalai Lama had a long talk when Mother said, 'even in his arms compassion was flowing'. Now, there is a difference in compassion, there are many kinds. There is a lot of compassion in our consciousness, but to reach a point when even the arms manifest compassion is a unique stage or level. You can imagine Dalai Lama's condition of compassion. In 1973, he was only 36 years old and I was seated next to Dalai Lama, when Mother said, 'even in his arms compassion was flowing'. There are different levels of consciousness. Now, what is this supermind entering into the earth? It is the penetration in the cells of the body. Supramental consciousness is, by definition, comprehensive consciousness which is aware of each and every particularity, which is aware of each and every individuality. This is a very short definition of supramental consciousness: at once comprehensive, apprehensive and projecting.

Swami Sachidananda Bharathi: I understand supramental consciousness. My only difficulty is 'descending on earth', because as you say, it is an experience in my own being of this consciousness. It is essentially a fruit of an expansion of my consciousness. The ego, the self expands further and further. In Christian terms, we say, the process is of grace and love. Grace comes and we are able to expand and grow in love. In this love, I am able to embrace more and more, and finally I become one with nature, like St. Francis of Assisi who could communicate with God and with the animal kingdom. So, this way our consciousness penetrates into, comes into the cosmic consciousness. I do not understand the point of view when you say 'consciousness descending on earth'.

Prof Jonathan Shear: I would like to make a comment, descending from a huge wonderful level to something very practical. Let us say that someone sufficiently advanced in yoga can look at a person and say, 'You need this or that.' or something very simple like, 'This *chakra* is open, that one is closed.' This, or at least something like it, is perfectly easily testable within scientific means.

I have wondered for many years why this has not happened. You simply get half a dozen *yogis* who can do that, or who want to do that, and then you have a series of people just walk in front of them and be observed by them. And then, if you have tremendous agreement among these *yogis* about the people's *chakras*, for example, this would begin to give us very scientifically significant evidence that the human nervous system is an appropriate instrument to be able to see such phenomena. So, take any kind of phenomenon held to be accessible only by psychic and not by physical means. Whether such things can be identified objectively or not is in this way, in principle, objectively testable. I have wondered for years why this has not been done. It would only be a very rough test, and refinements of content could be added later. But, if there were high correlations between different *yogis*' reports, even here this would be astonishing to the scientific world. It would also have tremendous moral as well as practical consequences. May be, someone here can say why that has not yet been done. But, I do not really even care about that. Why not *do* it?

Prof Kireet Joshi: Your question, 'What is the concentration of *yogis*?', is very important. My answer is: It is a very big programme and even the *Upanishadic* recordings, to my understanding, are reserves of this very effort, so that there is a kind of accurate description given, as I said, of *annamaya*, *pranamaya*. Then, there we find in *Mandukya Upanishad*, *jagriti, swapna*, *susupti*, *turiya* and in *Kathopanishad*, experience of immortality. Now, all these descriptions themselves have taken years and years of practice or *sadhana*. There are some kinds of scientific statements available here.

Prof Jonathan Shear: I myself will not call it a scientific statement if the means of testing are not available. Whether it is true or not, of course, is a separate question from whether it is scientific. And I, too, have some relevant experience with practising *yogis*. Yet, there still remains a question. Different people have very surprisingly different sorts of perceptions. I am not talking about a great, high level. Just some of the things which you referred to, and which I

think are actually available for research. The teacher, for example, could look at and identify people's *chakras*. Or, there are many people here who have been around *yogis*: you can have conversation although you are not using your voice. You use your thought and have conversation back and forth, and realize that you have not even opened your mouth and used your voice. Even if only people at a high level are going to be able to see a phenomenon such as a *chakra* or another's thoughts, this would provide no problem for research, if you have 'intersubjective corroboration' of the correspondences of their reports by independent researchers. That is what science requires. So, why do not have people come forward to do it? I simply do not understand!

My plea is, let us do it. And then, a wider communication can begin to take place. And then and only then, from my viewpoint, can we actually call the statement (of such observations) 'scientific'. But without this sort of thing, if they do not make it objectively verifiable, it is not scientific. Verifiability means that it can be verified by anyone. In my framing of this, the *yogis* will be the *instruments*. The scientists will do their experiments. The *yogis* are like the telescope, and their reports, the 'print-outs'. My plea is — let us do it.

Prof Kireet Joshi: I would answer only to some extent. You are right to say that the statements in the *Upanishads* are not scientific in a certain sense. You might say that they are accurate statements. According to you, the word 'scientific' means something more than accurate, and I agree with you. The problem, as I understand, has been that the field of spiritual experience is very vast. And, people travel in this field of spiritual experiences. The possibility of their coming or converging to a particular point takes a very long time. Therefore, it has not yet happened.

Take for example, the meeting of Sri Aurobindo and the Mother. Two *yogis* met. The Mother came from France and Sri Aurobindo was in Pondicherry. The two *yogis* met, and Mother described her experience. The Mother asked Sri Aurobindo: Will the supramind descend on the earth? This was the question she asked.

Both of them knew what supramind is. Therefore, the question had relevance. Then, Sri Aurobindo said, 'Yes'. The Mother described that as soon as he said, 'Yes', the supramind began to descend on earth. Here, the two *yogis* were sitting together and there was a complete communication between the two. Now, this had been recorded in their entire lives thereafter. If you see their physical lives, they continuously worked together.

How could two *yogis* coming from completely different traditions, living far from each other, understood that both of them had reached the supramental consciousness? She asked a question of which she had no answer. But, Sri Aurobindo had the answer. Mother said that as soon as he said, 'Yes', she saw the supermind coming down towards earth, not descending on earth, but coming down towards earth. Now, this is a recorded fact. Not only a recorded fact once in a while, but thereafter for years and decades, they worked together. And, many of us, for example, have demonstrations. In my own personal life, I have. And, Arabindada is here — he also has many experiences in his life. Hundreds of us, not only one or two, have remarkable experiences and communications. You will find that, if you really scientifically study. I am personally perfectly satisfied as an individual. But, I cannot still say that I can demonstrate, as I have not reached that point. Even Mother said that we have not reached that point where the supramental manifesting on earth can be demonstrated. And, this is a work to be done.

Prof Jonathan Shear: But, my question is small. I am not asking about demonstrating the supramental descending on earth. I am asking about what for most of the world appears impossible, and what in your talk seemed to be taken for granted as possible and actual: the *guru* looks and sees this or that. If it is the case that there are many people, more than half a dozen, or perhaps a thousand, or ten thousand around the planet, who can demonstrate any of these simple things convincingly — in a scientifically observable way — this would have the impact on a highly increasing number of people who would seriously listen to the

discussions about supermind descending. So, my question is again: Why do not have people who do these little, small things that would have a huge impact?

Prof Kireet Joshi: For example, Sri Ramakrishna said about Narenda, his experience of '*Nara-Narayana*'. He had a vision in which Narayana said: I want to come down on earth. And, 'Nara' was a *rishi* in that meditation. They all assembled together. And, Narayana told him to come down with him. So, this is an experience of Sri Ramakrishna that he described, which is available to all of us. It is a wonderful statement of a descent of the Lord, the *avatara* on earth and a *vibhuti*, 'Nara', coming down on earth, thereafter. And then, their meeting together on earth is also wonderful.

Now, to those who are doing *yoga*, or who have practised *yoga* — this is a believable statement. I cannot say that these are verifiable in their own right. But, it is a believable experience. If Sri Ramakrishna has described it, I can believe it. But, as I said, the field is very vast, and this is not happening so easily.

Prof S.P. Mukherjee: I am sure there are many more inquisitive minds present here who would like to seek clarification from Prof. Joshi. But, for shortage of time, we have to stop here. Thank you.

DISCUSSION ON THE PAPER OF N. MUKUNDA

Title: *The 'Mechanistic' View of Nature – Its Refinements and Relevance to Consciousness*

Coordinator: *Prof S. P. Mukherjee*

Coordinator: Prof. Mukunda, you have tried to draw our attention to some physical processes with all their subtleties as revealed in quantum mechanics and quantum physics in understanding consciousness. The presentation is now open to discussions and questions.

Prof Kireet Joshi: Dr. Mukunda, first let me congratulate you for one of the most brilliant speeches I have heard on the subject — as scientific as one can be. There is one question which I would like to ask you. It is not directly touched by you on the subject, still it is a question which is bothering me a lot. This is about 'probability'. Are all events in quantum physics always probable, or do they actually occur?

Prof N. Mukunda: Well, I would like to have a slightly extended answer to this question. Quantum mechanics has a very beautiful mathematical framework which was discovered first. The interpretation of this mathematical framework became an enterprise of great difficulty. And, it was this interpretation that did not come automatically with mathematical discovery. People had to devote a lot of effort to explain in words, what does this mathematics mean, what do the laws of quantum mechanics mean. It was in this part that the laws of probability came. This led to the probability interpretation of quantum mechanics. So, the laws of quantum mechanics allow us to predict with what frequency different results of measurement can be found. As I mentioned yesterday, this is the problem of infinite regress.

So, early thinkers like Neils Bohr said that when you have a quantum system and you carry out an experimental measurement of some property, you have to use an apparatus. An apparatus is roughly comparable to us in size and properties. The apparatus is classical, the system is quantum mechanical, and how they interact is unanalyzable. This was Neils Bohr's view. He said that we cannot answer the question. Quantum mechanics will give us the probability for various results. We do the experiment and invariably reproduce predicted probabilities. He said that we cannot say anything more about how it all happens. Von Neumann, the great mathematician, came soon after, and he had a different attitude. He said that the system is quantum mechanical, the apparatus is quantum mechanical. We must describe each of them and the two together, using the laws of quantum mechanics. Then, he had a problem. He could never convert probabilities into actualities. That was when later, people like Wigner and Von Neumann appealed to human consciousness and said that within quantum mechanics we have no way of explaining how actual events occur. We feel that when a human observer makes an observation and human consciousness enters, then something is registered into the consciousness. Then, the chain in the regression is broken. I will say something about it later. So, this is the status at that stage. Today, the situation is different.

Prof Kireet Joshi: Can we say that the events in quantum level do not occur?

Prof N. Mukunda: This is a problem of language and it would appear in other cases, also. One cannot answer that question directly. Some event or phenomenon occurring at the quantum level has to be amplified to what we call the macroscopic level. It is only then — we can detect, see, sense and observe. So, if it is asked whether one can directly observe a quantum phenomenon, I think, the answer is — it is not possible. We are too large and we are too coarse. When we talk of the photo-electric effect, we shine light and an electron is ejected. It is not the individual electron which is observed. It creates an avalanche of other electrons in a

suitable apparatus which then creates an electric current that we are able to measure. We are not directly touching the quantum system. We have to amplify the system and then we observe. So, we work backwards and then we say that we have observed what we think actually occurred at the quantum level.

Prof Kireet Joshi: That means that probability is only with regard to the knowledge of the occurrence and not of occurrence itself.

Prof N. Mukunda: *No*. This is the point: probability at the fundamental level in quantum mechanics is *not* an expression of ignorance. It does not say, if I had known a little bit more, I would not have used the language of probability. *No*, in quantum mechanics, probability is irreducive. It cannot be replaced by our ignorance, our not knowing. "If only I knew a little bit more." — it is not that. So, Wolfgang Pauli used the phrase 'statistical causality'. Quantum mechanics is causal in the sense of making statistical predictions which can be verified, again and again. It cannot make, it does not make deterministic statements. It makes statistical statements that have been verified without any doubt. But, it is not a reflection of our ignorance. Nature works that way at that level.

Prof Kireet Joshi: Therefore, events are only probable.

Prof N. Mukunda: When an experiment is set up, we know the 'state of a quantum system' — that is a technical phrase. Quantum mechanics tells what is the meaning of the word, 'state of a system'. And, it tells you what is the meaning of the idea, 'maximum possible information about the state of the system'. These are well defined. Even when you have maximum possible knowledge of a quantum system as permitted by the theory, you can make only statistical predictions. You cannot do any better. A state of maximum information in quantum theory allows only statistical predictions about what you do later. It cannot be pushed any further.

Prof Jonathan Shear: I loved your presentation. But, in the discussion you added one word which is very striking to me. I

never heard that word used here before. You said it is '*human* consciousness' introduced into the system. So, this raises for me a very great puzzle, which ultimately, I think, is deeply connected with the topic here. Everyone here probably knows the question about 'Schrodinger's cat'. To me, the immediate response will be, "The *cat* will know." The cat, of course, I presume, has got to be just as capable of macroscopic perception as we are, or it could never catch a mouse, which is also a macroscopic thing. So in a sense, brilliantly, it shows to me how primitive our notion of consciousness is functionally. When we say 'consciousness causes a collapse', it is in a sense, mere 'hand-waving', because consciousness is completely unanalyzed here. To me, why would it be only *human* consciousness that should cause a collapse? Perhaps angels exist — why should their consciousness not do it? Why should that of the cat not do it? Why should that of a flea on the cat not do it? Why should some micro-organism on a tiny particle not do it? This suggests to me that the real problem is to unpack the nature of consciousness before we can figure out its supposed role in the collapse. But, is it formally stated that it is *human* consciousness? Usually, the Copenhagen interpretation states it as 'consciousness'.

Prof N. Mukunda: Yes, let me just answer you in this way. One of the purposes of Schrodinger proposing the cat paradox is actually to say that, if we take the quantum mechanics as we understand its operation at the atomic level, it cannot operate in the same way by the time we reach our own scale and size. That is one way of viewing the lesson of this cat paradox. And so, something must intervene purely within physics, between the atomic level and the macroscopic domain. And, my understanding is that when they wrote about consciousness, they thought of human consciousness, but at this point, please permit me to read something which I wrote down particularly on this point. And, this is from the book of Roland Omnes, a very well-known French physicist: "It is difficult to understand how this proposal of the use of consciousness completes quantum mechanics. It is difficult to

understand how this proposal which was later developed by Landor and Powell and upheld by Wigner could lure such clever people. The explanation is probably to be found in the cultural tradition of German philosophy, where one finds, for instance, the doctrine of correspondence between physical reality and human consciousness which had been postulated some time earlier by Ernst Mach and Richard Avinarias. The proposal seems incredible today, not only because cognitive sciences have begun to unravel the working of the brain, but also because experimental data are now most frequently read by computers and not by human beings." I feel compelled to add here, and I cite a story. The great physicists' thought of the human mind as the final factor in a measurement as the *deus ex machina* transforming indeterminacy into a reality, did not remain confined to the physics community. It was a great news for the believers in parapsychology and all sorts of occultism that mind acts on matter. This is why, with all respect one may have and should have for the people who went that far in the hypotheses, one's duty is to emphasize there is no hint anywhere of its validity and one does not need it. The story shows nonetheless how difficult the problems of interpretation are. And, I think, this is very important.

Prof Suniti Kumar Pathak: It is not a question. I am really thankful that you have given a very good objective presentation on the consciousness that we may arrive at. However, I would like to invite your attention to the two traditional texts, rather scriptures of Basubandhu. He was of the fourth century A.D. He had been previously a pure phenomenologist as we understand today. Later on, he had a change and became an idealist, in present-day terms, a *vijnanavadi*. In both the texts, he had raised the same question of *anu* and *paramanu*. In interpretation of *paramanu*, in the *abhidharma* text, *anu* is actually the material, and when he discussed the same point, he used the term *chittanu*, the psychic atom, if I take the word *anu* as atom. Whether that is plausible or not is a different question. So, here you see human mechanism, I used the scientific term, 'human mechanism'. Mind

and matter are correlated and co-existing faculties. So, I fully share with you the idea about the Jaina thought. There are so many probabilities. All the probabilities are different postulates, with the provision of being real in time context, because time and space contexts in the human mechanism are unavoidable. In that context, what will be the corresponding term (I am just a learner; I am not a student of science; I am just a cursory learner) to adjust with *chittanu*, the psychic atom with the material atom? And, here I feel that Basubandhu can give you the answer. Thank you.

Prof Anjali Mookerjee: Here is one question to Prof. Mukunda. It is not a question, rather a suggestion. As you pointed out the 'photo-electric effect', like that, can the physicist or the scientist evolve a machine where (even now Prof. Pathak pointed out *chaittanu*) different types of consciousness could be reflected through, say, the thresholds for photo-electrons, different metals could be used so that different types of vibrations, as pointed out by Prof. Abraham yesterday, could be registered so that the type of thinking or consciousness reflected can be categorized?

Prof Shear, another interesting response or comment on your question 'Why *human* consciousness?' is that, there are different types of consciousness, as pointed out by Sir J. C. Bose, who found it in plants, and that is also pointed out by Prof. Valiathan. You cannot couple them or equate them with human consciousness, because that consciousness is different. One is 'reflection' as pointed out, and the other is a thinking process. I think, there is a difference between the two. Thank you.

Prof Jonathan Shear: Just within human consciousness, it is the same question. Does it have to be a consciousness that knows how to interpret the system? Rather, it is just human *perception*. How about an idiot, someone whose IQ is less than that of a monkey — as the average two-year-old is at a lower level than that of a chimpanzee on a human IQ test? The question remains even if we use the human species. What consciousness actually *is*, is a complete blank in this quantum-mechanical interpretation. So, how could it *do* anything? What is our criterion for the presence

of consciousness at all? That, again, is a blank on most people's thinking. To me, this points at a need to understand what consciousness itself is. Otherwise it is going to be mere 'hand waving'—we cannot know its role here, until we really know what consciousness is in a functional way.

Prof Anjali Mookerjee: Well, then you can look at it from the *Vedic* or *Upanishadic* point of view that *Brahman* is the super-consciousness or supra-mental thinking consciousness existing in everything.

Prof Jonathan Shear: I tried that, but it seems difficult in terms of the quantum mechanical situation, because if He (*Brahman*) is observing everything all the time, then it (the quantum mechanical domain) is collapsed already.

Coordinator: Prof. Mukunda, would you like to respond?

Prof N. Mukunda: Yes, very briefly. I want to clarify what I have already said, so that there is no misunderstanding. At one stage in the development of the understanding of quantum mechanics, a few people thought that consciousness is needed to make full sense of quantum mechanics. If that was so, quantum mechanics would never help you explain consciousness. It would need its own explanation. That situation is different now. So, the roles, in a sense, can be reversed and we can try to use the richness and our experience of quantum conceptual phenomena to try and make some headway in describing higher experiences and higher levels of consciousness, many levels. Start with simple models, phenomenological models. Keep improving them. Take experiences of people and interpret and so on. Having been here for last two and half days and listening to all of you — in my own way I feel, yes, I have the mental strength to suggest that the experience of physicists can help them to try formulating a theory of consciousness, to try models for consciousness. We will have to make changes. We may make mistakes on the way. We will make simple models first and make them elaborate later. But, as it is said in David Copperfield—'if Pagattis is willing'.

Coordinator: Thank you, Prof. Mukunda.

DISCUSSION ON THE PAPER OF SWAMI ATMAPRIYANANDA

Title: *Bhavamukha — Sri Ramakrishna's Unique Contribution to the Science of Consciousness*

Coordinator: *Prof S.P. Mukherjee*

Coordinator: Thank you, Maharaj for your nice exposition of Sri Ramakrishna's *bhavamukha* and your own understanding and explanation of the same. There must be some questions or comments to merit discussion.

Prof Anjali Mookerjee: For us who are connected with this institution – this is a marvellous exposition. I have a question and a comment, rather both are comments.

In the last part you have said about global and local expositions and you have also quoted Thakur saying about ice and water together. I, as a physicist, remember that ice-water has an anomalous expansion at around – 4°C. So, would we take that part as the synthesis part where they are coming back to the world? The other point I am trying to think of relates to what you said, *Vishitadvaitavada*.

Swami Atmapriyananda: It is an interesting observation. *Vishitadvaitavada* does not accept that '*jeeva*' absolutely and completely merges in the Absolute. In the *Taittiriya Upanishad* paradigm, we can see the *annamaya, pranamaya, manomaya, vijnanamaya* and *anandamaya*. Whether *anandamaya* is itself *Brahman* or whether *Brahman* is *anandamaya* – is the bone of contention. Ramanuja clearly says that *anandamaya* itself is *Brahman*. According to him, *Brahman* is *saguna*. If you get merged into the *nirguna*, then there is no question of your coming back. So, in that sense, it is not exactly *Advaita* or *Vishitadvaita*.

It is passing through *Vishitadvaita* reaching *Advaita* and coming back to the position which is similar to *Vishistadvaita*. Imagine it as a bell-shaped kind of thing. It goes up and comes back and stays there – so these two positions appear to be similar but one is beyond it and the other is below it, as I have understood it. Ramana Maharshi also gives his experience and says — you go, reach the *sahasrara* and come back, abide in the heart. It is a kind of thing — *Ishwara* or *Antaryami* as Swami Vidyadhishananda spoke about.

Swami Prabhananda: What is the implication of *bhavamukha*? Does it give a better idea to measure consciousness ?

Swami Atmapriyananda: Let me very humbly respond to that. In spite of all that we say and do, we have to go back and do what we have been doing – the same kind of role, the same kind of routine. I remember a beautiful anecdote — a story by Enigton. He speaks about the nature of the physical world. There was a great debate between Prof. Berkson who is a great authority in Philosophy and an astronomer, Rowell about the nature of time. Prof. Berkson's authority in the subject is well-known. After refuting all the arguments of astronomer Rowell on the subject and proving that time actually has no physical existence, Prof. Berkson looked at the watch and ran to catch a train which was starting at astronomer Rowell's time. So, we have to come back to the world of relativity. After three days' intellectual *bhandara*, we have to go back to the same mundane role. How do we fit that in different levels of consciousness? We think of consciousness, supramental consciousness and superconsciousness and so on. But, we have to come back to the mundane level. So, my understanding is that – we can psychologically simulate the *bhavamukha* consciousness. It is a kind of simulation and it is not imagination or realization. What was the state of the mind of Sri Ramakrishna? He was in the *bhavamukha*. Try to understand it in your own way.

The *yogasutra* gives a method of meditation: '*Vitaragavishayam va chittam*'. How do you attain that realization? By meditating at

the heart of one, at the mind or *chitta* of the person who has gone beyond all sorrows. If you meditate on Sri Ramakrishna's mind establishing in *bhavamukha*, try to tune yourself to it in some way and simulate it psychologically into daily life—then the conflict between the secular and sacred *karma* and *jnana* and meditation would be resolved. In ordinary life, you need to be absorbed into meditation and to be able to do something. The world is too much impinging upon you. This conflict may be greatly resolved. We are living in the world of relativity, we are forced to live in and at the same time, we are trying to get ourselves tuned to the higher mind of ordinary life.

Coordinator: If there are some more observations, please.

Prof Jonathan Shear: My question is that—can only the profound scholars understand most of the things you are talking about? I was trying to understand but I was puzzled about the English words of which I have no idea. I could not understand the notion of different egos – in waking, dreaming and sleep, for two reasons – first, you have seemed to apply that my memory of my dream is not my memory; and secondly it is of another ego. In terms of personal experiences, I find it very incomprehensible, because it seems to me that I am exactly the same person. When I wake up, when I have a dream, when I come out of the dream and again when I go to sleep – it is exactly 'I' and not 'me'. It has got to be some other variables to understand what you mean.

Swami Atmapriyananda: This is the clear idea of *Vedanta*. *Vedanta* clearly says that with every thought, ego is generated. In fact, Ramana Maharshi goes to the extreme point in saying that with every thought, ego is generated even in the waking state. Ego is the thought which is the fundamental thought of all thoughts The first thought that arises when we get up from sleep is the 'I'. This is the edifice. According to Ramana Maharshi, this is the fundamental basis of all the thoughts. With every thought there arises another thought. Buddhist *Vijnanavada* says, when a thought arises then a similar thought also arises. Watch the stream of thought. Who is the watcher? The watcher also is the thought.

The watcher cannot be apart from thought. So, there is somebody who is watching the watcher and there is the 'infinite regress'.

So, with every thought there is ego – there is 'I' which arises. In every dream there is ego, but in deep sleep there is no ego at all. *Vedanta* would ask – how is it that you come back from deep sleep and say – I slept well, I was very happy. It is ego which is informing you of that. So, this is ego in the waking state. The mind is held in abeyance and is not destroyed. Ego in the waking state has no access to the *sushupti* or the deep sleep state. *Vedanta* says that the *prajna*, the *taijasa* and the *viswa* – these three are associated with dream, deep sleep and waking states. These three states are actually being witnessed by the *sakshi chaitanya*, who corroborates this information. The unity of ego consciousness comes because of this unification by the witness himself which has got the *sakshi chaitanya*. This is a *Vedantic* conception.

Prof Jonathan Shear: When I am sleeping there is no thought. Is not ego present at that time? Ego in the awakened state is not accessible to ego of deep sleep. The more profound it appears, the more you are talking about these things.

Swami Atmapriyananda: Who do you know you are thinking of? Ego is definitely not present.

Prof Jonathan Shear : There may be no thoughts and no senses. At those times what you are calling ego may just evolve. But, you are saying that at those times ego is not present.

Swami Atmapriyananda: No, not at all, there are no thoughts.

Prof Jonathan Shear : What I call ego is distinguishable from thought. It can be seen in unboundedness. And, there is no thought as I was talking about the other day. When it comes out the thought appears.

Swami Atmapriyananda: In *Vedantic* parlance they say, when it is unbounded, there is no ego at all. You cannot be unbounded and bounded by ego.

Prof Jonathan Shear: I am trying to understand the phenomenology of my own experience and see how one can

correlate with the *Vedantic* stance. *Vedanta* has its very precious language and understanding, which go vastly beyond my own understanding, but I at every point try to connect it with what I experience actually. I have many experiences but there is a thing which I call 'I', which seems to be there all the time, exactly the same. If I get silent, it appears to me. When thought is gone, perception remains there in unbounded space in my awareness. Sometimes it comes. It is nothing at all except when I come out and have a thought. I call it ego. Then, there is a centre so there is no unboundedness. When it is in the unboundedness and there is no location, then I say, ego is gone. But, when it is infinite unboundedness, infinite vastness as Ramana Maharshi calls it, it may be infinite and it is intellectually called vast. To me, this is huge and is in all the directions. If that is ego, then in that case, it is not dependent on thought. But, it gives rise to all thoughts or thoughts appear to me then. That is not what you are talking about by ego. That is not ego.

Swami Atmapriyananda: There is unboundedness and there is location in unboundedness, which we are talking about. It is not space-time oriented. I can locate it. As location comes, it is space-time dependent. What you are talking about is not the space and time relation. In unboundedness, there is location as you said just now.

Prof Jonathan Shear: This is my experience, I do not know any terms just above it. This is the phenomenological space. This is in relationship to the physical space. To me, it is completely an open question. So, what is the phenomenological space? As *Vedanta* says, when location comes, it is space-time dependent. You cannot talk about unboundedness as such.

Swami Atmapriyananda: You are talking about the psychological space and not about the physical space.

DISCUSSION ON THE PAPER OF SUMANTRA CHATTERJI

Title: *The Conscious versus the Subconscious: A View through the Neurobiology of Memory*

Coordinator: *Prof A. K. Sharma*

Coordinator: Before the paper is open for discussion, I have one or two small points for clarification. Let us go back to the first patient. The first patient has factual memory. You have differentiated amygdala from hippocampus. You have told that the hippocampus has factual memory and also, emotional memory. In case of amygdala, there the question of memory remains. In the particular patient's case, he was told a series of things that he does not remember. His mother's death was mentioned to him. That is a case of emotional memory but he does not remember it. How is it so?

Dr Sumantra Chatterji: He shows normal emotions. When he is told that his mother is no longer alive, he takes it as a fact that occurred recently. He behaves as if, he is hearing it for the first time. He shows the normal emotional response, as if his mother has just passed away. So, at the present time, if you give him a fact which is emotional, he will show an emotional response. But it is all blind. He is a man who is really trapped in time, he is living in 5 minutes' segments. That is actually a good case to show that amygdala is probably okay.

Prof A.K. Sharma: Your studies in relation to memory and response are remarkable and wonderful. But, the method that you have applied is the physiological one. Now, in the study on consciousness you might have heard about the different methods, stages that are applied and analysed through different strategies.

Can it not be applied in cases which are not of absolute consciousness or eternal bliss? Does it not lead to different stages, which can be explained through the measurements of the body situation, and these renovations of methodology?

Dr Sumantra Chatterji: That is a very good question. It comes back to the point that you raised and hinted at earlier. I think, there are two answers to this. One is — trying to narrow it down to a measurable experiment with a clear framework. I very carefully chose not to talk about consciousness because, there is no clear experimental framework that I can apply for my rat experiments. But, what I can measure is a fear response in humans and rats, almost with the same methods. So, I take a problem that I define with available techniques and go after it. I think that one of the problems is: whose definition of consciousness are we going to take? This is one big 'sociological' problem. So, taking your point, can you bring it down to something which is measurable? I happened to be a Ph. D. student at the Salk Institute where Francis Crick, the co-discoverer of DNA structure, was closely affiliated with our lab. This was when Crick was writing his book, 'The Astonishing Hypothesis', I was there. I could look through the initial drafts. We had many discussions and his approach was threefold: the first one is involved in investigating into 'visual awareness'. Humans are highly visual animals as about 40% of our cortex is devoted to vision. Examining visual awareness is something we can do, using psycho-physics. We can test the human without having invasive techniques. We can make the same experiment with primates, monkeys, because they are also highly visual. Visual awareness is something that has been very attractive, inlaid into consciousness. You can record simultaneously from hundreds of neurons, in specialized visual areas, and get neuro-correlates of such visual awareness. So, that is one way. It has been quite successful.

The second one is — working memory. Working memory is something, which happens, in the pre-frontal cortex. The frontal part of your brain is important for this. What is working memory?

It is a scratch-pad memory. I give you a phone number. You do not have a paper to write down. You run to your office to write it down, and you desperately hold on the eight-digit number in your memory. You hold it on in your pre-frontal cortex. So, that is working memory. Why do I say that it is related to consciousness? Because, you are acutely conscious at the point. You are trying everything you can to hold on to that. That is another way to consciousness, because you hold on to that. Then, you can bump it off. If I give you one phone number and say—by the way, here are two other mobile numbers on top of this, you will lose that one. That has been done in the laboratory situation. It is the limited buffer capacity. It is like a searchlight type of consciousness. Are you not acutely conscious of what type of information you are holding? You are conscious. So, that is another way of looking at consciousness, a very restricted way. It does not have the richness of what we probably think of consciousness.

The third one is — visual attention. You know there are ways how you attend to certain things and what is in the background. There is a very interesting psycho-physical experiment done with monkeys and humans. There are ways of getting at consciousness without necessarily defining consciousness. This is Crick's point. Why quibble for another hundred years trying to define consciousness? Let us do the experiments we can do now, getting ordinary information and let the definition of consciousness co-evolve with experiments. So, let the theory be enriched by the results and let the theory inform about the experiments, as well. May be, at some point, both of these will co-evolve and converge. May be, we will have a better and agreeable definition.

Prof Jonathan Shear: I would like to follow on the previous question. Your specific research shows that it is connected to some standard typology, levels of memory. It suggested to me a very interesting piece of research. When Prof Rinpoche was here, I asked him about these five or six levels of mind. Would the Tibetan vipassana practices, which are famous for this, enable an adept to stay at any one of these levels long enough to do some correlative

research (re physiology, etc.)? While he was not convinced of the usefulness of such research, he said, 'Yes, definitely'.

One of the things your research suggests to me here is that, if we have someone who is actually sitting at the level of pure bliss, with no cognitive activity at all, and we look at his amygdala and hippocampus with MRI, we should find a great level of activity in the one and very little activity in the other. This is the kind of step we need to take if we want to begin to calibrate objectively the human nervous system as a test instrument for exploring the different levels of consciousness.

Dr Sumantra Chatterji: These functions have been rightfully done. Looking at faces, we really read emotions, aggression, friendliness, anger. Facials, mapped faces have been used in MRI studies. It is quite stunning that the amygdala lights up even before your conscious response can tell you that emotion is recorded.

It is so quick, you can map faces in the background. There are ways of keeping up, the resolution is low, the MRI resolution gives you a few millimeters. That means, it sounds a lot, but you do not know what the neurons are doing at the same time. So, a non-invasive technique of mapping mental processes, with the resolution of a single neuron and time course in millisecond — is what we need.

Swami Sarvapriyananda: I remember, from school textbooks, we learnt that the brain is substantially void in infancy. But what you have shown here is that, the brain is dynamic and is constantly rewiring itself. Now, in terms of the seminar, the problem is : Whether an activity like meditation has any direct effect on the brain or not. There was a theoretical limit earlier, because we were taught that no activity can affect the brain, physically. But, what you are saying now is, our experiences affect the brain all the time. Now, will the doctors here, the scientists here, admit that there is no theoretical block to the hypothesis like this? You know, meditation can rewire the brain.

Dr Sumantra Chatterji: Absolutely. If I would admit the block, I would be out of business. I will be the last person to do

that, because the entire theme of my research is the plasticity of the brain, the capacity of the brain to change at a very high speed and constantly. You are right. The whole dogma that you grow up and in the growing years up to 10 or 12 years, you have some capacity, and then all is fixed has completely turned down its head now.

Swami Sarvapriyananda: Are school children still learning that?

Dr Sumatra Chatterji: Yes, unfortunately.

An audience: The basic structure remains fixed, this is dynamic.

Dr Sumantra Chatterji: We are forming the synapses. Both have structural changes.

Swami Sarvapriyananda: What school children are taught is that the connections are formed substantially in the early years of life and they are not changed, except by disease or decay over the rest of life span. The other thing is: I noticed, you did not go down to the genetic level. Have you found any kind of indication that the changes can be passed over?

Dr Sumantra Chatterji: What I do at MIT precisely is that we engineer mice genetically, where the mice lack one particular molecule in a group of cells. Then, I look up to the behaviour upwards. We can actually frame one gene or one molecule down to the groups of cell and its behavioural implications.

In terms of your first question, which is extremely important, at the levels of meditation, secretion of neuromodulators, things which I have not talked about like dopamine, ceratomine and some others are crucial. So, you can have a hardware, but during a meditative state, you might release one of these other chemicals, which may not act as a neurotransmitter. But, when one is doing some activity, a modulator can change things dramatically, in a matter of minutes. So, it is a completely wrong notion that changes cannot happen. I think in both ways. I have shown something bad and hope, you can locate something good, as well. The only problem is—measuring happiness in a rat. It is slightly difficult for us now. So, we are going with the bad

strong evasive emotion. But, obviously, the question is: what happens if you give a rat an enriched environment, something like Narendrapur, where you have a lot of enrichment! We are trying to actually mimic an enriched environment, with lots of toys and tunnels and balls in a cage, and seeing what do the synapses do in the amygdala. Do they go down? Okay. That is the prediction. Can you stress an animal, cause structural damage, then put the animal at Narendrapur and reverse the situation? So, it can go both ways. How dynamic it is! There are new brain-cells born in the hippocampus of 55/65 year old humans. New cells are being born, not just changed. So, there is plenty of hope for all of us. Only the brain that is being described in the text book, is hardwared and has no growth afterwards.

Prof Samir Bhattacharya: You have told that neurotransmitters play a great role. What you have not told is about the genetics of neurotransmitters, which have been generated. It is also another field that is coming up.

Dr Sumantra Chatterji: The problem is with disorders like schizophrenia, etc., which are complex mental disorders. It is not a disorder of a single gene. That is the problem. We have not been able to nail individual genes yet, and it may have multiple structures, also. Those are truly challenging questions. But, may be, we will evolve new techniques through these trials and errors.

Prof Anjali Mookerjee: You have told about the growth of the brain being stopped. Swamiji also said that the growth of the brain stops at the age of 11/12 or something like that. What I feel is that, after a certain period of time, the normal growth of our body, i.e., being tall or fat or thin — these things stop. But, the growth goes on till death. Similarly, the brain might stop growing in that sense, but its changes are there. That does not stop genetically, also. Even the genes which are dormant at one point of time, may get expressed later on.

Dr Sumantra Chatterji: Actually, there are stunning cases of blind people, who have other sensory modalities greatly exhanced. They can hear far better. Their touch sensation is far superior to

ours. So, it has been shown in the brain that, if a part of the brain is now dead for some damage in the cortex, neighbouring areas send their axons in those areas and take over the function and so, it is never lost. Something else can take up and do the job with modality. So, the brain is highly dynamic in that sense, even in the case of severe loss like blindness or deafness and so on.

Prof A.K. Sharma: Actually speaking, when we are dealing with and bring genes into the picture, we are not taking into account the vast area, where there is the repression and derepression factor. We may not be having the functioning of a gene throughout one's life because it remains repressed. All these factors which are coming up, appear to be new, though they might have been repressed, all along. These are the issues to be considered.

Prof Suniti Kumar Pathak: Actually, my point is different. You discussed the whole thing on the basis of deluded consciousness. What is it with the compressed consciousness?

Dr Sumantra Chatterji: I mean, I am going to hide behind the experimentalist's garb. I have no tangible definable way of getting at it, right now. So, it is the admission of guilt on my part and of the limited capacity that we have. I will not even go there, because I cannot begin to tell you how do I look at it. There are two ways you can look at things. Either it is so complex that you never get it, so, let us not worry about it and let us stay with the experiential, not with the experimental. Or, you can keep at it and may be, a few decades from now, we shall get at it, somehow. Will the understanding be complete? Will the reductionist be successful? I do not know. But, I can tell you this much that, if you do not do it, you will never get at it. That is for sure. So, let us try and see what we get.

DISCUSSION ON THE PAPER OF SUNITI KUMAR PATHAK

Title: *Rāvana Mahāmati and Shākyamuni Buddha in the Ārya-Laṅkāvatāra-Sūtra (A symbolic dialogue regarding the universal consciousness)*

Coordinator: *Prof Radharaman Chakrabarti*

Swami Sarvapriyananda: There has been a long standing controversy on the nature of '*shunya*'. In Indian dialectics we have been facing the controversy for more than thousand years, nearly two thousand years now. What is your position on this? What is the nature of '*shunya*'?

Prof Suniti Kumar Pathak: I have no suggestion. I only say what our Indian traditional scholars have said. Nagarjuna's analysis is very simple. It has got an evolutionary process, if you allow me to say.

In *Upanishads*, we have got the '*bhava*' and '*abhava*' and '*asti*' and '*nasti*'. Let us come to Bhagavan Buddha. What did he tell? He told about '*asti*' '*nasti*' and '*tadubhaya*'. That means, '*asti*' and '*nasti'*, both can be together. It is actually a line from the *Samkhya* philosophy. Buddhism has got a very close relation with *Samkhya*. That is to be understood at the very beginning of the learning. And, it is my humble submission that for learning Buddhism, one must go through the *Vedas*, the *Upanishads* verily, otherwise it will be very difficult to understand the technical terms of Buddhist speeches, what they actually mean.

Nagarjuna told, 'How is it that there are only *asti*, *nasti* and *tadubhaya*? Another dimension is there, that is *anubhaya*.

> '*asti nasti tadubhaya tad anubhaya,*
> *chatuskotivinirmuktah sunyam.*'

Why? The Western philosophers say, it is 'reality', Buddhism says, reality is a vague term. It has no full connotation. So, the whole existence itself is your thought-construction. You see, I am coming with my *trishna* and *avidya*. *Trishna* is the mother and *avidya* is the father. In Buddhism, for the *sannyasins* or *bhikshus*, they say, 'You kill your mother, kill your father, because these have given you the position of your existence.' There is a great controversy with the Buddhist position. The Buddhists do not accept the soul but they accept the lineage from one life to other. So, in that context again, the question of *asti* comes. I am raising the question myself. If I take *asti*, then the opposite term *nasti* is there. If, I take *ubhaya*, then, again, *anubhaya* is there. In this way, Nagarjuna's whole statement is that, *asti* and *nasti* are nothing but the thought-constructions. Please, mind the word, 'thought-construction'. Whatever we do in our extrovert mind, are all thought-constructed.

Prof Radharaman Chakrabarti: What is *mayopama*, if it is not illusion? Is it something like simulation deliberately made?

Prof Suniti Kumar Pathak: Yes. He has given some illustrations in the text. The illustrations are very interesting. In calm water, you can see the reflection of the trees. Do you think that the trees are real? No. Again, there is another image. You are standing before a mirror. Your image is there. Is that really you? There is another question. An echo is there. You are on a hill, you are making a sound. Is that echo your sound? No. Again, in a desert, you are moving and there is no water but you are looking at water. These are the false things. So, silence is the only solution.

DISCUSSION ON THE PAPER OF ARABINDA BASU

Title: *What is Consciousness?*

Co-ordinator: *Prof. Radharaman Chakrabarti*

Prof P. K. Mukhopadhyay: So far as consciousness is concerned, I think, this is a concept which every system admits. In all the different schools of Indian philosophy, so far as I know, there are two senses given, fit for two types of things. One is *prakasha*. Nobody denies that in their system whatever is considered as consciousness, it must be capable of producing knowledge or reveal things.

There is unanimity throughout Indian culture about another concept. That is this: whether you use the word *manas* or you use the word *chitta*, it is unconscious. There is an expression for all these types of things, that is *jada. Jada* and *chit* — are all the time being used in every system in the same sense of the term. What is *jada* is not self-revealed. It lacks the power of revealing itself and also others. On the other hand, so far as consciousness is concerned, it not only reveals everything, it itself gets revealed either by itself or by another state of similar thing as consciousness. So, about *prakashakatva* or *prakashasvarupatva*, there is absolutely no denial in any system of philosophy.

However, in the *Vedanta* system, for ordinary persons and outsiders, a problem has been created. While systems like the *Nyaya*, etc., unequivocally and always, use the terms *jnana, chitta* in the same sense of the term. *Vedantins* use it in two different senses. So, one might think that there is a possibility of ambiguity. Absolutely not. They say, there are two senses of *prakasa*. As he (the speaker) said, *anubhati*, means thereby that state of mind,

whether you call it *chitta* or *antahkarana* or *manas*. The state of it or some states of it are sometimes called 'knowledge'. There is a tripartite division — matter, mind and consciousness. This is unknown, in the sense that consciousness and mind can never be put together. Mind is always on the side of the unconscious. What is the difference? It has been clearly said that mind, some state of *chitta*, takes reflection of consciousness. It has been clearly said that, it is the metaphorical use, the secondary use of the sense 'consciousness' or *chaitanya*. The expression used is — *vrittau chaitanya vrittau jnanatvopacharah.*

Nobody says that state of mind is conscious; only sometimes because of peculiar relationship with consciousness, which is only one, that is being referred to as conscious. When we contrast it with the European context, they never have a sense of the *manas* as an internal sense. One famous psychologist said, internal sense-organ is a misnomer. So far as other psychologists are concerned, I have never found anyone saying that there is an internal sense-organ over and above the five sense-organs and which have been compared with *manas* or *chitta*. So, my only point is this. Yes! there are different senses of it, but it would be a very great injustice to the Indian culture if one says, we are using the word in an ambiguous sense or that we are using the word without any definite sense. All the time, there is an absolute definition. If there is ambiguity, that is our failure. There are different senses and we failed to notice them. Thank you.

Prof Arabinda Basu: It is neither experience nor experiment. It is pure philosophy and wonderful, as such. But, why did you not mention *vimarsha*? There is no *prakasha* without *vimarsha*.

Prof P. K. Mukhopadhyay: In that system, *vimarsha* and *prakasha* are ontologically the same thing.

Prof Arabinda Basu: If you say so, then I am with you. I did not mention one fact about 'X', which is remarkable. Before joining the university, he wanted to read a particular book, extremely difficult. He came to a teacher who taught him previously. He wanted to read the book, at least partly, before joining the

University. The teacher refused because he himself had not read the book completely. He read it only in bits and pieces. So, he said, 'No'. However, ultimately he had to agree because this man's father was a friend of his. It was, more or less, a personal kind of relationship.

It so happened that whatever question the student asked, the teacher answered without knowing the answer. It always tallied with what the student found in the book and the language itself was the same. How does this happen, I do not know. Please, those who are practising some kind of discipline, if it is *yogic* or spiritual and those who are making experiments in the natural science fields, give us some light.

Prof J. L. Shaw: There are a number of questions and all the systems in varying degrees have discussed these problems. I am just focussing on some of them, like: whatever X said, is true. You have raised this question. How to explain this phenomenon? Now, Indian systems have discussed four sets of causal conditions for four types of cognition. One is condition for cognition as an event, condition for the truth of that cognition, (I am using the word cognition not in the sense of knowledge in the Western philosophy, cognition is some sort of awareness of something) and condition for false cognition and condition for the guarantee of it. So, somebody may think that whatever somebody says is true. But, the question comes: is there a guarantee for it? When there is a guarantee, it assumes the status of knowledge. So, these phenomena may happen because somebody's mental states are due to certain conditions, such that, whatever arises there becomes true. Somebody's may be false also. Then, someone knows things beforehand—that also Indian philosophers have explained in terms of different types of cognition, *laukika* perception, *alaukika* perception, and *yogaja* perception. So, all these can take care of these different types of cognition. Similarly, cognition of cognition, that how do we know, is a vast field of Indian philosophy.

Dr Radharaman Chakrabarti: Would you please come to your point?

Prof J.L. Shaw: The questions he has asked have been discussed by almost all the schools in varying degrees and from

the depth of it. For example, we infer knowledge also. Not only it reveals, one section says. Another section says, we infer. Another section says that it is another type of mental perception. Buddhists take a different attitude to it. They have proposed a sort of unity of four in one. That means, when you have cognition, you have cognition of cognition, the instrument of cognition, object of cognition — all of these are together and the relation is not causal, but there is some sort of relation. So, all these problems in different systems have been discussed in different ways.

Dr Radharaman Chakrabarti : We may need an explicit answer. Would you like to comment on that?

Anandamoyi Ghosh: I have a small question. In Buddhist *Vinaya* text, there is a term *patijagrukho*. Do you think that *patijagrukho* is equivalent to consciousness? If it is so, then what is the opposite of *patijagrukho*?

Prof Arabinda Basu: There is consciousness in an unconscious way. Let us put it this way. In the *Vedic* imagery, *aprakritam salilam*, unconscious water remains in the beginning of the whole process of evolution. What happens, there is a desire emerging out of it. Now, the desire is a psychological concept or a biological concept. What is there in *aprakritam salilam*, which takes shape and form as the whole world by evolution? So, you take the *shakti* aspect of *prakasa* or the supreme reality, whatever it is. We call it *prakasha* and *chit*. In the language of later philosophy, *vimarsha*, the power of becoming is there in all levels of existence including material and if there is anything below matter, there also. So, that is consciousness, but it does not appear as consciousness. It is veiled as unconsciousness. It is consciousness as existing, consciousness as moving. This movement has made consciousness appear as no-consciousness. That is why, the *lila* concept comes in.

An audience: I have a question of an ignorant person. There is so much talk on consciousness. I would like, for clarification, to know what is being talked or spoken of as the highest consciousness? Is it the same thing which is God-oriented? Can somebody clarify this, or the present speaker, what he means by

the highest consciousness, what is considered as God in God-oriented traditions?

Prof Arabinda Basu: This is a matter of nomenclature. I do not want to meet religious issues. I tried to make an academic question, depending on certain experiences which I myself have known to be absolutely correct and valid. If you want to call it God, I have no objection. We call It — God, as It is Consciousness, which knows everything and becomes everything. If God becomes everything, perhaps, you will not agree to that. I do not know. But as far as I am concerned, *prakasha* or *vimarsha* becomes everything, and everything is God. There are only different levels of manifestation. That also has to be added.

Miguel Guimaraes: We are talking here about mind, consciousness. I know that the English term is a little tricky in the sense, it identifies the mind, even with a concrete mind, then with the abstract mind and then with the higher mind. In relating the languages, we make very strict difference between mind, spirit, consciousness and brain. I wish, we had more precise words in English. So, sometimes I get a little bit confused when we talk here about mind, consciousness. I can read to you three lines from this book. The book says that the mind is what is produced on the subtle phase by the brain as a whole. It is the mind that contains consciousness of a man's conscious state. As consciousness is an essential reflection of the soul or spirit, it gradually manifests itself more, as the cerebral capacity increases. We see these three things. I would like you to clarify about mind, about the Supreme Mind, *paramatma* or the Great Soul, *Brahman*. Is mind and consciousness the same thing? Do brain and mind mean the same thing? What do you refer to as mind?

Prof Arabinda Basu: I wanted to mean by higher mind one level of consciousness and several others also. If you want to call it the supreme mind, the higher mind, you can do it. Supreme is the Highest Mind.

Miguel Guimaraes: But, you make a distinction between spirit and mind.

Prof Arabinda Basu : You may explain it in your terms, the way you want to.

Dr Sumantra Chatterjee: I think, there is a confusion and concern that is going around the table, repeatedly in different forms. It is that of reaching consensus about, at least, a few terms, that we at least know that we are speaking about the same thing. This is a problem that strikes, rather startles, someone like me who by definition and by profession, and may be a little boringly, a reductionist. This is a problem that all scientists face regarding definition. So, in that context, there are problems of definition. I would suggest, following what he said, and I think, nobody will dispute that whatever levels of consciousness or meditation or spirituality on individual level one person reaches, the depths of that are difficult for us to perceive or understand. It is his or her state of mind that gives rise to certain feelings, certain sensations. So, if that is not under dispute, then, I would humbly suggest that the assumption that all neuro-scientists make is — the mind is what the brain does. That does not mean that I understand what the brain does or I understand all the mental processes. I am not making that claim at all, which is often mistaken as that. Then, we agree, at least to a certain degree, that the mind is what the brain does, whatever we see as happening is the mind. Now, we do not understand some of the links, some of the mundane ones. We understand some of the more mundane processes to some levels — the chemical level, the physical level, but we do not understand most of the levels. If the mind can achieve the highest state of consciousness, it can eventually be traced back to some mental activity. If those mental activities are rooted somehow in the physical substrata of the brain, then I think, there is less room for confusion in terms of terminology. Depending on what we mean by consciousness, it will take a little time for us to agree, around the table, because each of us have our own feelings or views. But, unless we do this sort of gradations of some broad definitions which would not be controversial, I think , we would not be able to move forward.

Dr Radharaman Chakrabarti: Well, an appreciation is really very urgent to achieve. But you see, we all are moving in circles. Swamiji has something to say, I think.

Swami Atmapriyananda: It is a statement. The *Bhagavad Gita*, for example, talks about *kshetra* and *kshetrajna*. Consciousness perhaps is *kshetrajna*; and the field of manifestation of consciousness, where consciousness is seen to manifest, is perhaps the *kshetra* or 'brain'.

Prof Jonathan Shear: If we take ordinary English, there is a big difference between being *conscious* and *unconscious*. It thus seems that consciousness ought to be an attribute in some way of every conscious state, and only of these states. Phenomenologically, it is there when you are conscious, and is not there when you are *unconscious*. The only thing that could fulfil these commonsense observations is *pure* consciousness, consciousness that is absolutely quality-less. Because, as Kant pointed out, if it had any quality of its own, it would be incompatible with some possible experiences (namely, those experiences where this quality was absent). In other words, if we define consciousness as that which is compatible with all possible experience, by immediate inference it could not have any property of its own. So, as Kant concluded, it has to be 'pure, original unchanging consciousness.'

Kant's problem, of course, was that (as it seemed to him) there was no comparable experience. He could give no reason why people could not have such an experience, it was just an emperical statement. But, I think, most of the people here would hold that this experience can be had.

So, again, supplementing this logic, suppose you take everything out of your awareness as you can. And, if you take everything out, you are not unconscious. This then seems to be a simple phenomenological definition of consciousness. (This account, of course, says nothing to the question of whether it is produced by the brain or reflected by it).

Dr Samir Bhattacharya: In the last seminar on consciousness last year, the *Samkhyan* philosopher asked a question to a neuro-

scientist who was present. I shall put the same question to Dr. Sumantra Chatterjee and see what response he gives. The question was: In a state of deep sleep, is there consciousness or not? What would you say?

Dr Sumantra Chatterji: I would say that there is no consciousness, although the brain is at its highest activity level during deep sleep. So, the brain consumes more energy in deep sleep than in any other state. The brain is actively consolidating whatever it had experienced when it was awake recently and then weeding out what it wants to store in long-term memory and getting rid of the rest. This is in connection of consciousness, the neuro-biology of consciousness that Crick proposed. You have also said that the purpose of sleep and dreams is precisely to have enough capacity in the brain for more storage later on. We get rid of the stuff we do not want to store. If we could really remember everything then experiencing will be finished. That is why we forget the majority of what we do not want to keep. It is a fact that we have dreams that are strange sometimes, which have some spurious association, which do not seem to make any sense. Dreams are sometimes kept and sometimes discarded and we are not always conscious of that.

Prof Samir Bhattacharya: What Dr. Chatterjee has said was exactly the answer that the neuro-scientist gave last year and the *Samkhyan* responded with a very short comment which was very illustrative. He said that according to Indian philosophy, *Advaita* — there is only consciousness in deep sleep. And, according to the neuro-scientist, there is no consciousness in deep sleep. That is the gap which has to be bridged up.

An audience: I am hearing it for the last three days. It is a layman's question. I do science, so I understand that when something is called 'pure', there is another version called 'impure'. So, when we call it 'pure consciousness' does it mean that there is the existence of consciousness which is not really pure?

Prof Jonathan Shear: In this phenomenological language, 'pure' and 'impure' would simply indicate whether it is just quality-

less consciousness itself, or something else is that is being referred to as well.

Prof P. K. Mukhopadhyay: This is a very sincere question on my part, which troubles me very much. My question or position is this: I want to understand the expressions, like transformation of consciousness, levels of consciousness, change of consciousness, etc. Is there anywhere, any document in our tradition or elsewhere which shows that consciousness itself gets changed, consciousness gets transformed? If there is none, then we should think about how to express ours. Almost everyone has some sort of spiritual experience. Unless we make spiritual experience very weird and mystical, after doing a great job or seeing a good act or job, the mind feels some sort of peace. That is also a sort of spiritual experience. Everyone has it. But, the point is that, we have degrees of our attainments — that I can understand. We can progressively realize some, that we can understand. But, is it the consciousness itself? Is it something that changes and has degrees? If it is so, then we can ask the question in two levels : (i) Is there any standard literature where these expressions have been used and what are the expressions? And, (ii) if that is so, how will we find in our tradition that *chaitanya* becomes *jada*?

Prof Arabinda Basu: I think, I have to respond to my friends here. Two questions have come to us. (i) Does Buddhism accept or does the teaching of Buddha accept *vijnana* or consciousness, without soul or not? The other question has been given by Prof. Mukhopadhyay. First, I respond to the first question. In *Prajnaparamita Sutra*, there is the comprehensive description — how this consciousness be transformed from one individual within the periphery of the stages of his mental achievements. We have the *dasabhumika sutra* with reference to the *Boddhisattvabhumi*. In every stage of *Bodhisattvabhumi*, we are to undergo the changes of consciousness, transformation from one status to another.

I have to go to the 'no mind' status — what the Zen-Buddhist claims. There are so many Zen Buddhists who hold the view that the mind is always *vidusaka*, I use this word, who distinguishes

— this is good, this is bad, this is moral, this is immoral, this has form, this is formless. But, consciousness is at that stage, *klishtamanovijnana*, in the technical Buddhist term, when the mind is in a perturbed or afflicted condition. When it comes to the question of 'pure consciousness' — it is like a deep sea where there are no waves. That is probably your response that we are to enter into the deep sea.

I think, in this respect, we have a quotation from Swami Brahmananda's writings. He has described one folk-play, *yatra* performance that was going on about Lord Krishna. The people who were in the orchestra were singing — 'Krishna, Krishna'. Narada came and gave his presentation. After that, Krishna entered and there was no sound. So, let me read out that portion.

'The folk opera troupe had come. In the prelude of the opera — the orchestra was played. The musicians were singing, too. They were singing, 'Lord Krishna, come Thee!'

The actor, who enacted the role of Lord Krishna, was outside — enjoying smoking and talking to others. He was least bothered to listen to the call.

But, when the prelude was over, Narada appeared on the stage. All were eager and earnest. Narada started singing with all devotion and sweetness, "Hari, my heart of hearts, Govinda, my life". Hearing it, Lord Krishna rushed in. He could not keep himself away, ignoring the intent call of His devotee.

It so happens in the life of devotees, actually. Until and unless, a devotee realizes the grace of God, he remains restless and vocal. But, with the realization of God, he attains peace and quietude.'

So, that is the stage of *alayavijnana*, *shunyata*— when the mind will be at the calmest stage, without no wave. There is the Chhang Zen Buddhist saying — the mind is in the no-mind status. So, 'no-mind' is *amanasvikara*. This is a technical term. As long as *manasvivkara* is going on, it is not so. *Amanasvikara* may be interpretated in two ways — (1) negative interpretation and (2) affirmative interpretation. You give your *manasvikara* to awe. Awe is *anuttara* and the mind goes to the *anuttara* status.

VALEDICTORY SESSION

15 January 2006

Concluding Address

SWAMI PRABHANANDA

Asparśa-yogo vai nāma sarva-sattva-sukho hitaḥ
Avivādo aviruddhaśca deśitastam namamyaham

(I salute this great *Yoga* of non-touch *Advaita* which conduces to the happiness and welfare of all beings and which is free from all disputation and contradiction.)

Respected Prof Jonathan Shear, Chairman of the Plenary Session, Prof N. Mukunda, Prof Kireet Joshi, Prof A.K. Sharma, other distinguished participants, venerable monks and nuns, ladies and gentlemen, I extend a hearty welcome to you.

Scholars are still debating on what Consciousness is and where it arises — in the brain or whether it is non-localised. However, consciousness study has become a forum in which scholars of many distinct fields have taken keen interest. A special feature of this International Workshop-cum-Seminar is the active participation of spiritual practitioners belonging to different traditions and also of experimentalists. While they narrated their experiences, scientists and philosophers evaluated them by the yardstick of scientific methodology. Even as the experimentalists and experientialists assured of verifiability and replicability of their experiences, some hardcore rationalists seemed to remain dissatisfied.

In this connection, I quote from Robert K.C. Forman's paper entitled, 'What does Mysticism have to teach Us about Consciousness?' in the book 'Models of the Self' (2002) edited by Shaun Gallagher and Jonathan Shear: '...mystical experiences point clearly towards a distinction between awareness *per se* and the ordinary functional processes of sensation, perception and thought. They suggest that awareness is not *constructed* out of

the material process of perception or perhaps the brain, but rather they suggest a distinction and / or interaction between consciousness and the brain. Furthermore, they suggest that awareness may have a non-localized, quasi-spatial character, much like a field. Finally, they tend to suggest that this field may be transcendental to any one person or entity.' Thereafter, the author has made a touching conclusion. He writes: 'If the validity of knowledge in the universities is indeed governed, as we like to claim, by the tests of evidence, openness and clarity, then we should not be too quick to throw out the baby swimming in the bathwater of mysticism.'

As in the past, this Workshop-cum-Seminar has given us valuable materials to think about. Most of the interactions were friendly, discussions were frank and also in depth.

Some distinguished scholars have now joined in the panel to look deep into some knotty points already discussed in the academic sessions and throw light on them. I expect, some more valuable thoughts will emerge. Before I end, I express my sincere and hearty thanks to all the distinguished participants and coordinators of the Workshop-cum-Seminar and especially, to Prof Debabrata Sen Sharma and Swami Sarvabhutananda and his team for their untiring hard labour. I thank the CSIR, DST (Department of Science and Technology) and Education Department, Government of West Bengal for lending some financial support for this cause. Also, I thank DST (Department of Science and Technology), ICPR and East India Pharmaceuticals Co. for their promise to assist this project financially. I welcome all of you, once again.

Brief Summing-up of the Proceedings

SAMIR BHATTACHARYA

Respected Swami Prabhanandaji, Prof Kireet Joshi, Prof N Mukunda, Prof Jonathan Shear, Prof MS Valiathan and Prof AK Sharma, distinguished guests, participants, ladies and gentlemen:

This is the third day of the conference on consciousness which started on the 13th January. The three days' deliberations have 22 speakers in 11 academic sessions in total. All the eminent speakers have spoken about consciousness from their own angles, knowledge and information. So, it is really a stupendous job to sum up the whole thing within a short time, especially by me, who is neither a spiritualist, nor a philosopher, not even a very great scientist. So, I know it well that I am incapable of summing it up in its proper sense and I am afraid that I will not be able to satisfy Swami Prabhanandaji. The novelty of this particular conference is that, experienced participants or experts, who have experienced consciousness, have been invited. And, they exchanged views and ideas with people who have come from the experimental knowledge front. So, the idea of Swami Prabhanandaji has, in fact, been very much substantiated.

Different messages have come from the persons who have experienced consciousness. They are from different sects, different traditions, starting from Sufi to Judaism, from Hinduism, Buddhism, Christianity, and from different schools of thought and practice. From their presentations and interactions on consciousness, one thing has emerged in a very emphatic manner, that is, you get bliss, joy — unbounded joy. You get a flood of flowing light, different kinds of light — in fact, you have a shower in the bliss of

light. These kinds of expressions emerged during this seminar and one of the special aspects of this conference was the session which was scheduled on January 8, with Prof Rinpoche, about the Buddhist way of understanding consciousness. It was summarized and interpreted and discussed by Prof Jonathan Shear. Those who have experienced consciousness talked and had dialogues on the different stages of consciousness with people expressing consciousness from the angle of their own experience or information based on experiments. That resulted in a very fruitful interaction. We might have a little cross-dialogue, cross-interpretation, but at least, we got the opportunity to understand each other's language. This is something very novel. I was discussing with people who have attended different Congresses. All of them agreed, at least on one point, that this is something new and unique where people who have experienced consciousness and persons who do experiments on consciousness are exchanging one another's points.

Now, consciousness has been discussed thoroughly, different aspects of consciousness have been touched upon. One can go from sub-conscious level to conscious level and again, from conscious level to the super-conscious state, where one need not have to use the brain, or do intellectual exercise, but can go beyond the earthly perception and get into the other world. Now, an important question comes, again and again, which is about how can one prove it and give evidences of all these? And, in this particular context, it is very interesting to see how consciousness can be proved either in the way of spirituality or in the way of philosophical interpretation or scientifically. In these three different dimensions of understanding consciousness, it was discussed thoroughly that spiritual and philosophical outlooks have been far advanced in understanding consciousness, because they go with the elevation of thought, understanding, experience, etc. The problem with science is that, it requires evidence, requires tools for quantification, requires appliances. And also, the problem with science is that, scientists are really the late-runners in this particular

event of urging for the understanding of consciousness. But, although the angles of vision and approaches in understanding consciousness are varied, at least, there are some common languages, some common understanding. The jargon that is so much used, is 'mind'. Science believes that mind is the point of accession for other concepts like consciousness and we are hearing from the philosophers that mind should be withdrawn — mind is not a part of consciousness. These are the things which confuse us. But, confusion is the point from where interest arises. If you are not confused, you do not ask questions. If you do not ask questions, you do not discuss. If you do not discuss, you really do not understand. I was discussing with Prof Mukunda, who has attended these three seminars consecutively, and we found that one of the interesting points is this: they are telling that there is a clear trend of evolution in these three seminars. The second one is better as compared to the first, and the third one is far better than the second. That shows the success and ingenuity of the concept that, there should be a platform where different expertises from different fields can come and have dialogue about consciousness. Someone said that, they have not understood what consciousness is and that is why, it is very much necessary that there should be more discussion. And, this conference has a success in the sense that, it has provided some kind of platform for interactions, as Prof Shear told, 'Why aren't the *yogis*' experiences interpreted in the language of science, which should be easy!' and 'Why, in principle, should it be impossible for every cell of our body to be conscious?' Sri Ramakrishna's experiences clearly focus that every cell of the body is conscious. He is the embodiment of consciousness. Amoeba has consciousness, Prof Valiathan was telling. We do not know much about it. A single cell might have consciousness. We do not have measurements, we do not have appliances, we do not have equipments to measure. So, we really do not know where consciousness is seated, whether it is in the brain or in the heart. Somebody said, it is in the brain; somebody said, it is in the heart; somebody said, brain and heart both are

conjoining together to form a network to link consciousness. Even when you do not understand many things, those things exist. The situation is similar with consciousness also. The purpose of this life is to get happiness and to get happiness is to understand consciousness. And, if you have the feeling of consciousness, you are verily surrounded by joy and happiness. The question is: Can the earthly comforts give us happiness? We know that it cannot give. At some point of our life, we feel that comfort is not the answer. So, at some point, you feel something else is necessary. And, this 'else' is — remaining in the understanding of consciousness. With this, I again convey my best regards to Swami Prabhanandaji, because for him only, this kind of venture is possible.

Panel Discussion

Prof Kireet Joshi: This particular session is devoted to questions and answers. We have received a few questions, perhaps some more will come in the process — as we move forward, and we shall raise some questions ourselves, so that we can be more enlightened among ourselves, and through the process there can be a collective enrichment of our understanding of the problems. In the first place, what I propose to do is to request each panelist to read out the question and give the answers. I have given one question to each of my friends here.

Prof Debabrata Sen Sharma: This question, of course, is not addressed to me, it is addressed to Prof P.K.Mukhopaodhyay. The question is: Does artificial intelligence have any possibility of creating conscious objects? If so, how would these conscious objects be spiritual also?

The thing is, we have a lot of discussion, especially on consciousness, consciousness of the inner self, or consciousness of the outer world. You see, today science is progressing. One can think of consciousness of the outer world. May be, in near future it will be possible. One can expect so. But, consciousness of the inner self has a far way to go. Thank you.

Dr M.S. Valiathan: There is one specific question addressed to me about J.C. Bose's observation. Can metals be equated with animals, plants and, of course, man?

The short answer is, 'No'. But, that requires some explanation. I brought up J.C. Bose's observation in the context of what Caraka had said about consciousness. Caraka was a great medical authority. According to him, consciousness, is '*chetana*'. Matter, to be called *chetanavan*, has to be conscious. It has to take in sensory inputs and respond purposefully. That is the definition he

uses. He uses other words also for '*chetana*', but '*chetana*' is most often used. Now this, of course, applies to a patient in deep coma who may not respond. As the coma and the consciousness level improve, he would respond more and more purposefully. These are understandable today.

In that context, I raised the question: if you interrogate a human being, how does he respond? You can interrogate in many different ways, verbally, instrumentally and so on. Then, I extended this context and brought in J.C.Bose. He interrogated metals. He interrogated plants and animals using electrical stimuli. The same stimuli are used in human studies also. There you find Bose's observation which puzzled me. I brought it up for the attention of everybody here. When you interrogate metals, plants or animals, you apply the same kind of electrical stimuli as you would apply to humans. And, you get the same kind of response — staircase response, fatigue response and so on. These were published by Bose more than a hundred years ago, from this city.

Nobody has questioned Bose's methodology, nobody has questioned his instruments, all the details were given. Therefore, I raised the point: if you interrogate plants and animals and you find similar responses, it has a resonance in our whole discussion on consciousness. You cannot wish it away, you may wish it was not there, I can understand that. The fact is that the identical response is there. But, it is never discussed in any forum. This was the point I made.

Metals, certainly, cannot be equated with man, but we should also remember, metals are not foreign to us, we cannot live without metals. Our red hemoglobin has iron. We are dependent on iron and there are other metals on which life depends. So, metals, plants — nothing is foreign to us. They are all a part of life. This was the context in which I raised the point.

Prof Jonathan Shear: I have inherited a question: What is the relationship between consciousness and knowledge? There are both a very simple answer and a very difficult answer. The simple one, as far as I am concerned, is that without consciousness there is no knowledge. Knowledge is a function of consciousness. In

the *Vedic* tradition, we have the saying that 'knowledge that is in the book stays in the book'. In the book, it is not actually knowledge. It is just marks on parchment, or paper, what you have. In the same way, it seems to me that computers have no knowledge whatsoever, they are just complicated 'books' that can do some processing. Without a conscious agent, I believe, there is no knowledge. I am not saying absolutely categorically, but personally I do not believe there is anything we would recognize as consciousness. Now, perhaps metals, and such things as machines, *are* conscious. Certainly, one can experience everything *as though* it is consciousness. But, whether it actually *is*, is a different thing. Whether it has interiority, whether it has anything that subjectively any one of us would recognize as conscious, I tend to doubt. So, that is one answer: without consciousness, there is no knowledge.

A more sophisticated answer is that, knowledge is a *function of* consciousness. Go back to Plato, and what we call 'knowledge' is enlivenment of very specific structures and potentials of consciousness. That may well be the case. But at any rate, exactly how consciousness relates to *anything* is a big question, and how it relates to any *specific* items we would call knowledge is even more difficult.

I would like to add one other thing to this picture that is important. Without consciousness there is no *value*. Imagine a universe where there is no conscious being, and where there is no God, looking at the universe. Just unconsciousness. What would have any value? The notion of value implies value *for*, for some conscious being. So far as I understand, that is our natural intuition.

Now, if this is true that without consciousness we do not have knowledge, and without consciousness we do not have value, then the most important thing we could possibly understand is consciousness itself, as the foundation of all value and all knowledge. And, whatever we can do to develop it, we should — or if consciousness in itself is understood as unchanging, to actualize it.

So, in long or in short: consciousness, in my opinion, is the precondition of any knowledge.

Prof Samir Bhattacharya: There are two questions. The first one is: Can different techniques, methods of meditation be accepted as alternative for scientific research? The second question is : Is it possible to discover a state or a depth of consciousness, either by experimentation or by *yogic* practice that would prevent violence in this world?

The answer to the first question is, 'Yes'. I mean, meditation. There are different techniques to measure the effect of meditations and people know it. I mean, blood pressure, stress figure, etc. are well known.

The second question is interesting: Can there be some scientific method or research which is related to consciousness that can prevent violence in the world which is the major order of the day?

I know only one very exceptional example. Today, when Prof Sumantra Chatterjee delivered his lecture about the neurological research in his laboratory, showing how behaviour is changing, by means of different kinds of nerve, dendrites, actions and conditions, he could not mention, because of the brevity of time, about the other researches on neurotransmitters. One of the interesting researches in this field is that, in the brain there is one long peptide (peptide is a form of amino acid) known also as opiotropicotropin. This is a long peptide. This is constituted of about more than 75 amino acids. When it is formed it remains inactive. But, when it has to act, it becomes cut into different pieces and these pieces are very important for the behavioural aspect of the human being. One is known as endogenous morphine or endorphin. There are three types of endogenous morphine or endorphin — alpha (α) endorphin, beta (β) endorphin and gamma (γ) endorphin.

I am not telling you about the other parts. Another is metencephalin. Now, if your beta (β) endorphin level is increased, you do not feel any sensation of injury. It was discovered by observing the camel. When a camel is stabbed, it does not have any feeling. Why? The camel has to eat thorns and when it eats thorns, it bleeds, yet the camel does not feel. It is found that beta (β) endorphin is at the highest level at camels. So, the camel has no sensation of injury.

Gamma (γ) endorphin is responsible for irritation, anger; and alpha (α) endorphin is for soothing anger. Now, it has been found that in the case of schizophrenic patients who are violent, gamma (γ) endorphin is increased. So, one of the experiments which was done in a hospital in Sweden is very interesting. It formed antibody of gamma (γ) endorphin of a schizophrenic patient who was violent. The antibody was administered through the spinal fluid and it was found within a month that there was a calmness in the patient at the schizophrenic stage. I do not want to elaborate it. But, I want to tell you that science is progressing, but definitely very slowly.

Prof Kireet Joshi: I have two questions here. One is addressed to Prof. D. Sen Sharma. If he is here, I would like that the question is answered by him. Another is for Dr. Avraham. Is he here ?

Prof Debabrata Sen Sharma: I have discussed this question with the questioner. Actually, this question is related to semantics. What is the meaning of '*esah*'? I have given a quotation from the *Kathopanishad*.

Yameva esah vrinute tena labhyah. Now, what does *'esah'* mean in the quotation? I told what I intended to convey here is the theory of Grace, which is the cardinal theory in the philosophy of Kashmir Shaivism. I find some echo in this verse. Therefore, I have quoted this verse and I have interpreted it in the light of Kashmir Shaivism.

The second point is: In the tree of life, it is shown that there are different colours. We would like to know the significance of these colours. I cannot answer this question because Prof Avraham Elqayam, who is not here, has prepared this model from his tradition, that is, 'Kabbalah'. I do not know what is the significance of these colours. There must be some significance which he only can explain. I do not know much about 'Kabbalah.'

Prof B. K. Banerjee: A statement has been made that mind is the function of the brain and consciousness is the function of the mind. I would like to know whether the panelists agree to it or not and whether consciousness is pervasive of brain and mind.

Prof Jonathan Shear: I come from a background in which it was taken for granted that mind and consciousness are functions of the brain. However, there is a very interesting piece of logic which is now occupying a lot of Western thinkers on this subject. The essence of it is as follows: If you look around, you will experience qualities; they are called 'phenomenological' qualities. And, it turns out that with the exception of those that have to do with pure spatial relationships, none of them are implied by anything in basic physics and the physical sciences. None whatsoever. If you look to the theories of physics, they are all designed, since Descartes, to remove all these elements in the first place. Even in physiology texts, you get nothing about individual experience, unless you insert reports of people's experiences of subjective qualities, such as, red, blue, green, happy, sad and so forth into the discussion. I am talking here about the subjective *quality* of such experience, not its behavioral manifestations, physiological correlates, etc. The famous imagined example, devised by philosophers, of a lady expert in everything having to do with the physiology of vision, but blind herself, can be useful here. Suppose also that we have a complete science of vision (as it is understood from a purely objective perspective), and that she knows everything in this field, teaches it with great success, etc. Nevertheless, she herself would have no idea of what red *looked* like, what the differences between red, green and blue looked like, and her knowledge of that field would not include knowledge of these phenomenological qualities. And, you can extend this by analogy to every sense. So, if you have a scientific discipline which *in principle* can imply *nothing whatsoever* about a topic you are concerned with, then that topic cannot be explained within the confines of the logic of that discipline.

So, the moves that are being made are that, (1) within matter there must be something like consciousness and matter gives rise to it, thus matter has to be different from how we are already conceiving it, or (2) consciousness is something independent and parallel. And, a lot of people are moved by this argument,

completely opposed to their own intuitions, which is what a good argument can do.

So, that is my response. I personally am very strange, because regardless of my own intimations, I have great reluctance to draw conclusions where I do not have data. One relevant example — this happened to me one time. I was asleep, and I woke up and had to go to the bathroom. So, I got up and tried to turn on the light switch. Then I saw my finger going through the light switch. I go "Huh . . . ?" So, I turned around and saw my body lying in the bed, and I realized *that is* what had to go to the bathroom. So, I walked back, and got in the body and got up, went to the bathroom, and then back to bed. Now, is this a proof (of independence of my consciousness from my body)? From my perspective, this is not a proof at all. It could be one of two things. What happened could be as it appeared: a 'subtle body' going out of the gross one and back, not what a physicist would call 'physical'. On the other hand, as anyone who works with computers and mathematics can imagine, the brain could be perceiving things and just changing the phenomenal 'origin' (the constructed centre of its perceptual perspective). Now, which situation the case is, is testable. So, while I might have the intimation that consciousness is not physical, I would find it unacceptable, on a deep level of feeling, simply to assert that it is the case.

So, all of these questions, in my view, are empirically testable. And, when and if we have some clear experimental evidence one way or the other, then, and only then would I be comfortable in making a judgment.

Dr M.S. Valiathan: These are questions about mind and consciousness. I am going back to the traditions in Indian medicine. They are not the same. Mind is a sense-organ. This is a master sense-organ, in the absence of which no other sense-organ can function. I mentioned this in my talk. But, consciousness is different. To give a piece of evidence, if a person has deep sleep, the mind is not active. But, unlike what our biologist friend said earlier today, in the Indian tradition, consciousness or the self is awake, because

when you wake up from your deep sleep, you say, 'I was sleeping. I had a good sleep.' Who is that 'I'?

Now, that thing, in the Indian medical tradition, is consciousness. You may call it 'self'. These words are interchangeably used in *Ayurveda*. But, mind is different. In fact, it is a sensory-organ with its own channels. There are '*srotas*' through which the mind flows, receiving inputs and putting out out-puts. To that extent, it is a sense-organ, whereas consciousness is not.

I think, there is no other point asked in that question, if I remember rightly.

An audience: The phrase 'mystic experience'—I am encountering this word for the last three days. What is exactly meant by mystic experience? I discussed with members of my family. I have seen the dictionary. But, I could not get a satisfactory answer. So, I talked to Prof Mukhopadhyay in the morning. He told me, as per his definition, mystic experience is to commune with the Supreme, that cannot be thought of, that cannot be communicated, that is beyond logic, beyond intellect, beyond expression.

Today, one of the speakers, if I have understood correctly, was defining mystic experience, which can be narrated, which can be repeated. It has been a confusion for an ordinary person like me. Can you throw some light on 'mystic experience'? I could not get the answer.

Prof Kireet Joshi: Let me try to say something on this question. The term 'mystic experience' has been used by many psychologists and one of the great writers of the last century, William James, wrote a book called 'Varieties of Religious Experience', in which he has devoted one chapter to mysticism. He has said that a mystic experience has some characteristics.

One characteristic is, it is ineffable; it cannot be described, cannot be expressed. Secondly, it has an element of knowledge in it, an experience in which knowledge is involved. The third is that, this mystic experience can arise from a minimum experience of the presence. You are seated somewhere and suddenly you feel 'presence'. You cannot describe what that presence is like. But,

you feel that something is present all around. And, you begin to be seized by that feeling, that somebody is present.

Now, this presence may be a very simple, ordinary feeling which one feels. It is like that — 'somebody is standing behind me,' and 'I feel, somebody is behind me.' It is a very simple experience. It can be more vivid also, depending upon the individual's own psychological condition. Therefore, everybody does not sense a mere presence. The quality of presence is felt. This quality may be of different kinds. A presence which may give you calm, a presence which can give you a sense of protection, a presence in which you feel sweetness all around, a presence in which you feel somebody is giving you a call, some kind of demand on you and you would like to respond to it. It may take in some other forms of presence in which you feel a relationship with the object which seems to be present. Sometimes we may have even inner conversations with that presence. There are still deeper levels of this mystic experience. You may have a kind of, what is called experience of eternity. You are uplifted from the momentariness of life and suddenly you feel the presence of eternity. You cannot even describe that, because from the momentariness suddenly you are lifted up and you feel there is eternity.

These are the minimum experiences of mysticism. Then, mystical life gives you plenty of other things. There are varieties of them. I was a young boy when I read Sri Ramakrishna's encounter with, or Narendranath's encounter with Sri Ramakrishna. When Sri Ramakrishna touched him, Narendra cried out and said, 'What are you doing to me?'

This is a kind of mystical experience in which we feel completely out of all the ordinariness. You are transported into something, you do not know about where and when it may happen. Once Swami Vivekananda decided that he would not go to Sri Ramakrishna to meet him. He was pulled. What is this pull? He was pulled to meet the Master. Sometimes he thought that Sri Ramakrishna was a mad man. But, what is this, yet he felt an attraction, which is irresistible? These are the deeper levels of a mystical life, experiences in which you feel such a tremendous pull.

Mystical life is, of course, very very rich and is something, on which volumes can be stated, because everyday one can have a mystical experience and those who live a mystical life, every encounter is a mystical experience.

In other words, we might say that a mystical experience is an experience of consciousness, of an awareness, which has, at least at the minimal level, a contact with an object, the nature of which in philosophical terms can be described in many ways. But, it is a contact, a consciousness awareness of the object, which is not of the nature of the physical or of the currents of life or of thought. These are the negative ways of describing, but at a higher level that object of knowledge or object of awareness begins to unfold its contents. The mystical life consists of entering into different contents of that object of knowledge, upto the highest level. In the *Rigveda,* there is a beautiful sentence, which gives one of the descriptions of the mystical experience. Perhaps, it is, according to me, one of the highest experiences of the *Vedic* knowledge —

Na nunam astino svah kastadveda yadadbhutam
Anyasya chittam abhisancharenyam utadhitam vinasyati

It means, *na nunam asti no svah* — it is neither of today nor of tomorrow, it is an experience of eternity. '*Kastadveda*' — who will know it? *Yadadbhutam* – it is an experience of wonder. And, this '*ascharya*' is there, because of the following reasons: *Anyasya chittam abhisancharenyam* —

It is something which is movable. In itself it is immovable, yet it is movable by a consciousness which is other than itself.

Now, this is a very paradoxical statement. It itself is what it is. Its consciousness is a consciousness of another. It is by that the consciousness of this reality, which is immovable, becomes movable. This is '*adbhutam*', this is the reality. It is something quite different from anything that we experience in the world. '*Utadhitam vinasyati*' – if you try to understand it, it vanishes— *adhitam vinasyati.*

According to me, this is one of the profoundest experiences of the object that you come into contact in a mystical experience. Any other question to ask?

An audience: My question to Prof Mukunda. He is a renowned physicist. I respect him since my college life. I want to know: can one represent the different states of mind, the superconscious, conscious, sub-conscious; can one represent these states in the form of energy levels, as in atomic energy levels; and is transition from these higher levels to the lower levels possible? If possible, can the energy of this transition be materialized? If it is so, how can it be realized?

My second question is: Is there anything as quantam consciousness? Then, what is that? How can it be represented?

Prof N. Mukunda: First, let me ask you, for what did you say that you respect me and admire me? Is it for my Physics? Whatever little I know, in my talk in the morning I suggested the kinds of concepts which we have had to develop for understanding physical systems at the quantum level. They may give us some hints about trying to use similar concepts in a different context. You talked about different levels of consciousness being thought of as a different energy level. Partly correct. I went roughly in the same direction, not necessarily towards the energy levels, but states of a system. As you know, in Quantum Theory, the concept of the state of a physical system is very rich and very subtle. There is nothing like it in classical Physics. So, my suggestion is that, we might try to exploit its richness. We have found something in a certain field. In that field, we are confident of what we say. The natural tendency is to say, 'Can it be exploited in trying to understand something else?' So, one cannot say, in advance, 'Will consciousness be mathematically describable in the language which we use in Quantum Mechanics?' This is unlikely, but we know something, which we did not know a hundred years ago, the whole structure of modern Physics in Quantum Mechanics. Can we build it, exploit it? Let us see if it suggests some new avenues to understand consciousness. This is my suggestion. So, I do not think you can be as literal as saying 'levels of consciousness may be like energy levels'. Apparently transitions take place. How to picture them? I do not know.

Prof Kireet Joshi: Thank you, Any other question? I have two or three questions which I would like to ask my colleagues here. I begin with Dr Mukunda, because just now you spoke of trying to define consciousness. Now, I speak like a young boy who does not understand Quantum Physics or even Physics itself. When scientists tell me, 'Oh, we do not understand consciousness!', I feel rather shocked. When young boys and girls understand what is consciousness, these great scientists say, 'We do not understand consciousness!' And, I feel surprised. So, like a young boy, I ask you the question: What is the difficulty? Why do you not say, it is very easy to understand? Why is it very difficult to say, what is consciousness?

Prof N. Mukunda: I suppose, the difficulty is that we have to relate it to things we are familiar with. This is one point I made in my presentation today. At least in science, the process of understanding it, at every stage, is to try to relate the new things to what you already know. And, you go on in the direction as far as you can, and once in a while, you find something radically new is needed. These are the great revolutions in scientific thinking. So, if I say, I do not understand consciousness, I mean that. I am at the moment unable to relate it to the things that I know. However, I did not leave it at that, today in the morning. I said, may be, the time is ripe for physicists to become interested in this problem. Start constructing simple models, take hints from the things that you know, that are extremely subtle in the physical world. You may or may not succeed in giving a description of consciousness immediately, but start taking some steps in that direction. Talk with people who know a little more and bring your own experience and then build up models, enlarge them and see, it leads to a successful conclusion.

Prof Kireet Joshi: May I give some question to you?

Prof A. K. Sharma: The question is: Why do scientists feel that it is difficult to understand consciousness? I do not think, scientists feel it difficult to understand consciousness, because, as Prof. Mukunda has mentioned, in the case of science, we always need

the methods, the replicability, and the evidences. These are the three basics on which science proceeds. Evidently, consciousness as being a part of the whole system, is allowing us to comprehend all other things, because consciousness is a thing which is allowing us, which is making us have all these evidences, which is making us get the tests and all these. So, I would say, consciousness and knowledge, more or less, are the same at that level of knowledge. So, that is the reason why, at present, it is difficult to understand consciousness at that level, to analyse consciousness at that level. It does not mean that it is not possible or so, but with gradual methods these are coming up. It may be possible in near future. Because of consciousness, we are able to formulate science, we are able to work out the different evidences, we are able to work out the strategies as well as the replicability of each and every experiment. That is possibly the reason why the scientists consider it to be a little bit difficult.

Prof Kireet Joshi: Can you answer this question,?

Dr M.S. Valiathan: My first difficulty is, I am not sure about the position of scientists. I cannot, by strict definition, call myself a scientist. But, for a physician, consciousness is something very real. We understand it very well. Take, for example, the specific case of a man who gets a stroke. He is brought to the hospital, he is comatose, barely responds to painful stimuli and does not respond to any other stimuli. This is a common experience. In a favourable case, in a couple of days, he begins to respond a little more. His breathing becomes more regular. He begins to open his eyes and begins to recognize a few people. He does not speak. Then, you ask him whether he recognizes so and so, his own wife, a cup. He would not say anything, but there would be a look of recognition. He begins to understand. You can make that out from his facial expression. And, this process goes on for a few days and then he begins to speak. We are extremely happy when that happens. But, when he begins to speak, what happens? The words are chosen inappropriately. If he wants to say 'book', he would say 'cup'. If you try to correct it, he could be furious. So, you

would find his inability to couple meanings with words. That phase passes. Then, he begins to follow the meaning of words and slowly, may be, within two or three weeks, he becomes fully conscious.

Now, this sequence is something which we all recognize. There are recognized ways of grading levels of consciousness. This is the medical way of dealing with this problem. It is understandable. But, the difficulty comes when we go into the philosophic basis of consciousness. That is why I mentioned Caraka's perception of it. The other great Indian master of medicine, Susruta, was a surgeon like me. Naturally, he wrote only a paragraph on the philosophic basis of consciousness. I do not want to repeat what I said in my lecture.

Prof Kireet Joshi: Well, I will continue with that subject, because this is the subject of our conference on consciousness. I would like to develop a little. I will take the help of Prof. Shear indeed. He is a master of precisions in this matter, as I have discovered this morning. He says, consciousness is awareness, having several layers to such an extent that even unconscious has awareness of that of which we are not aware, somehow that operates in us and affects our awareness. Supposing, I leave the discussion here only, how would you react to my definition of consciousness?

Prof Jonathan Shear: I myself often use those two terms ('consciousness' and 'awareness') interchangeably. However, in that case, the definition may not help. Because, if I think the same thing and use 'consciousness' and 'awareness', then I have not added anything. So, I myself, as I suggested earlier, give what philosophers call an 'ostensive' definition. If I want to indicate what colour this paperweight is, I point and indicate it, and show what I mean by the phrase 'this particular shade of green'. And, it seems to me and I am always surprised when this is not apparent, it seems to me that we can easily give an ostensive definition of 'consciousness,' at least in principle: "Consciousness is that which is there in all conscious states, in all awareness, in all experience." But, then we have to be able to locate and 'point to' what that is. Suppose then, consciousness is permeating but subliminal, much

— by way of analogy — like the air in this room. Probably, most people were not noticing it until I mentioned it. But, now that I mention it, you can feel it (too warm, just right, whatever). We can, under certain conditions, focus our attention on something and raise it from subliminal to clear, right in front of our awareness. But, consciousness, by our definition, would be the subtlest of all possible things, and virtually anything else can easily distract our attention and overshadow it. So, the most direct way to 'point at' it would be to let everything else go away. Meditation practices of the widest sort are designed to do that. And, everything can go away, and yet you remember what remains. And, you had to be conscious to remember that. Some interesting things emerge from this. First, when everything goes away, there is nothing to it. Nothing. So, it is called '*shunya*'. And, if you are attached to '*shunya*', then call it 'fullness'. And, if you are attached to 'fullness', then call it '*shunya*'. But, you *remember* it. And, I know through teaching people to meditate, when they get the experience and are asked, "What was the experience?", they may without any philosophical knowledge at all, respond wordlessly, "Uh!", or, just innocently say, "Nothing!"

And, this is very interesting. Because logically only, something with no properties could fulfil the definition, I suggested for 'consciousness'. It is like these glasses I am wearing. If they had any colour, I would not see colours in general. If they were green, for example, I could only see green. If consciousness had any quality of its own, you could not see anything different from that. So, this experience displays the only possible candidate for fulfilling the definition of 'consciousness' as *that which is recognizable throughout every possible experience*.

One more thing. In time, with enough familiarity, you notice 'It' (this emptiness or fullness or . . .) all the time, everywhere. So, it fulfils that aspect of the definition, whether you want to call it 'pure consciousness', '*shunya*', 'being', 'suchness', whatever you want to call it. The records of virtually every tradition have this. You look at the hand, and perceive that *there* it is, the hand is in it.

(Not necessarily objectively or ontologically, however. This would be another step, and we are just talking phenomenologically here.) So, the simple experience in meditation displays the only possible candidate for fulfilling the definition of consciousness. And, the later experience displays it as actually fulfilling it.

So, that is how I would define 'consciousness'. Formally, it has to be 'that which is there in every conscious state'. And, in fact, one can experience that pure consciousness, and then experience it all the time, even, it is repeated throughout the apparent unconsciousness of deep sleep.

Prof Kireet Joshi: I have now another set of questions. These days, there is a fashion to claim that modern science has now, at last, come to admit the truths of spirituality which are described in the *Upanishads*. Now, here we have eminent scientists with us. Fortunately, all of them are aware of the *Upanishads*. I am very curious to know from them: How do they react to this kind of claim which is being made ?

Prof A. K. Sharma: The experiences that have been gained through the sages, through the methods that they adopted in all the years, actually have led to all spiritual beliefs. Well, so far as scientific methods are concerned at present, those are based on certain methods, no doubt, on certain evidences. On this basis, science is something. Even now, there has been a misunderstanding, regarding science. True science is something based on knowledge and reasons. Science is nothing but reason. For everything, there is a reason. Science finds out the reason.

Well, we get that knowledge, science or '*vijnana*' or special knowledge through certain methods, as well as, through evidences. Spirituality also has been attained through certain methods adopted by our forefathers. Science always tells us that there are many things to know, we are yet ignorant of those things. Naturally, with more and more methods, we may be, at one time or other, able to arrive at the correct understanding. On the basis of this idea, the question of spirituality has become much more open. Scientists have fully understood and are fully aware now of the basics of

their mandate and of science. From that angle I would say, spirituality also remains a part of the understanding of science.

Prof N. Mukunda: I would like to divide my answer into two parts. One, firstly, I have been listening to, for the last three days, discussions on the concepts of consciousness, from so many philosophical points of view. The philosophical thinking is so refined, so verified that I felt staggered. It is really staggering. We are not used to so much of very abstract thinking, even in modern physics. Here, I express my admiration for what has been achieved in this philosophical discussion.

One point which was made many times is that, some of these experiences of higher levels of consciousness are not describable, are not communicable; these are ineffable. These words remind me of a situation which you also know, in physics. It is a distant parallel, but I will offer it for what it is worth. My understanding is that, the origins of our language lie in our normal daily experiences. And these, therefore, are unable to handle things which are very far away from such experiences. It seems to me that the difficulties in communicating or describing the experiences, higher experiences, conscious states which you have referred to so often, is partly because of this, because they are so rare, so uncommon, not easy to come by. It happens within physics, as well. The difficulties of describing quantum mechanical phenomena arise precisely because the words, the language we use refer to objects which we normally see around us, behaviours and processes which are normally taking place and quantum phenomena are not of the same kind. That is why language fails in describing quantum phenomena and we fail in making pictures or images, mentally. But, we have a way out in that case. That is the language of mathematics. We may not know exactly the verbal description of mathematical symbols and equations, but we know whether a mathematical treatment is correct or not. It is something like that, we can check the internal consistency and logical corrections of a series of steps, but we may not know exactly what it means in terms of nature. At least, we cannot describe it in the language of

classical physics. So, this problem with the use of language is, I find, a parallel inexplicability of higher kinds of experiences. I am willing to accept it because I see that thing also in physics. So, this is the problem of limitation of language. But, on the other hand, there seems to be such a remarkable agreement in the accounts of people from very different philosophical traditions, from very different spiritual traditions and the accounts in different scriptures in the same tradition. They reinforce each other. It is a strong suggestion to me that, this must be a biological phenomenon. It must be understandable through the scientific method, at some stage at least. I would say that it is too early to give up and say, science cannot lead us to an understanding. That is my reaction.

Dr M.S. Valiathan: Science essentially deals with concepts, processes and products which are testable. But, there is a great part of reality which does not lend itself to testing. That is the problem. The *Upanishads*, however, claim that, through *yogic* practices, levels of consciousness can be tested. A hundred years from now, many more scientific tests may emerge and much more of the unknown would become testable. But still, what is unknown would always remain immeasurably greater than what would be known. We have to accept this limitation. We are made aware of this every single day. I gave an example myself in my lecture. So, to believe that all that exists can be understood through tests is a fallacious belief. This discussion about understanding everything through scientific tests reminds me of a story of Sri Ramakrishna, which many of you would know. There is a mountain of sugar and an ant carries away a grain and says on the way, "Next time, I will take the whole mountain." What is unknown is as great as the mountain and the little bits we know through the tests are like grains of sugar.

Prof Kireet Joshi: I have another series of questions. I will start with you. It has been claimed that modern science has now come to admit that there is consciousness in matter. It is a claim and I am not saying. In the context of that statement, for example, which is attributed to Jagadish Chandra Bose, consciousness is present

in matter, life and mind. It has been claimed in the name of science. Science has come to admit that there is consciousness in matter.

On the other hand, there are many scientists who say, 'No, it is not true.' They argue that, in the experience of death, all that you claim to be conscious ceases to function. You may be a great scientist, a great *rishi*, whatever you may be, as soon as the blood flow stops, it affects your brain and all that you call conscious, is gone. Death, therefore, proves the thesis of materialism that all is actually matter, consciousness is only epiphenomenon. Do you agree or disagree? If not, why ?

Prof A. K. Sharma: At the present state of our knowledge, it is rather difficult to come to a consensus like that, because so far as the metal is concerned, very often endogenous microbes remain appreciated with metals. Gradually, there are changes in the metal, simply because of the microbial actions on the metals.

We have not yet got any evidence that metals have got life. Might be, I am not ruling it out, because in the matters of science, we are always trying to know the unknown.

Prof N. Mukunda: I am very hesitant to consider that matter on its own has consciousness. I do not think, I cannot believe, at least for the present, that the electron has consciousness, that an atom has consciousness. I do not think so. We are able to describe these things by other methods, by normal science, and the accuracy of our description is very great. Earlier, Prof. Valiathan mentioned the reactions of different kinds of things to similar stimuli, electrical or heat or something. It occurred to me that they are reacting the same way, because all these are the manifestation of the behaviour of matter, when exposed to electric currents, when exposed to heat. That might be one way of thinking about what he said. So, you cannot tell me enough, to make me say that the electron has life.

Dr M.S. Valiathan: I think we are using different terms like matter, life and consciousness interchangeably. I do not know whether this is correct. Matter is configured very differently at three levels—metals, plants and animals. The level of organization

is constantly changing and there are big changes when it comes to mammals. But, all through, you find similar responses to electrical stimuli.

All I am trying to say is, it requires more understanding before dismissing that there is no life in metal, taking a liberal view of life. The manifestation of life would be quite different, of course, at different levels. The point I made was that for a hundred years we completely ignored the work of Bose on metals and plants. Even today, his observation is puzzling us, but we do not follow up on his study. I am now coming to the question which Prof. Joshi raised. It is a tough question. I must be honest with the audience. There is a philosopher in me and there is also a religious person in me.

They respond very differently to this question. The philosopher in me believes that matter, the original, '*avyakta*', indeterminate, undifferentiated kind of existence, co-evolved into matter and what we call consciousness. I am of course quoting the *Mulasamkhya*. When a person dies, all is finished. That is the end of it. Here each individual spirit, each individual consciousness, each individual soul — is used interchangeably. Each one is separate. When a person dies, when a plant dies, there is the end of it.

But, another person in me is dissatisfied with that explanation because there are conservation laws of energy, of matter and so on. Nature conserves everything. Nothing is lost. Can we really believe that nature which conserves all sorts of things, will not conserve such a thing as consciousness? This is difficult to accept because consciousness is the most precious of all. Can we accept that it disappears, goes away into nothingness? That does not make any sense to the religious person in me. Then, it seems to me that there is consciousness, but I do not know its nature or location. I do not believe that it is testable by any of the methods we have today. Even after a hundred years, it is doubtful whether we would come out with any effective method. What probably happens is that when consciousness shines on the substrate — metal or plant or animal or man, the degree of reflection would vary depending on

the substrate. In human beings, it is more fully reflected, but in metals, perhaps, it is least expressed. I admit that conflicting views cohabit in me. That is the dilemma I am facing everyday.

Prof Jonathan Shear: I would like to respond a little to this question, and also to a comment that Prof. Mukunda made. I personally fully accept that consciousness is as we ordinarily experience it in an everyday way, and I also think it is very easy to give a biological account for all sorts of things about higher states of consciousness, and why they should have evolved — *if* we accept that the most difficult point that consciousness itself can be explained, or is a property of what can be explained. The very quick outline: if we accept that there are different states of consciousness, and the idea that 'higher states' are often associated with unusually efficient activity. This of course is often reported by martial artists, athletes 'in the zone', *yogis* in all sorts of activities (all claims of supernormal abilities aside). And, I have encountered this in many individuals. So, if we make the supposition that the human brain has evolved to produce different states of consciousness, and that the so-called higher states are more effective functionally, then we can easily see why there could be bliss associated with them, because on the whole, things that are more important for organisms, are more pleasurable. (This, for example, is why we like to eat and reproduce). The other part of it is that, this state of pure consciousness can simply be the ground state of the system interacting with itself, its informational ground state, and the better it is tuned to that, the more efficiently it will be able to respond to all inputs and computation, and outputs as well.

So, we can easily make a biological account. And, we can easily make an idealist account, too, and put them together. So, these competing accounts are all up in the air. I think, they are all testable, however. And the thing is, even if someone says, "These experiences are ineffable.", we should note that *all* experiences are ineffable. You cannot communicate — except ultimately by pointing at the colour of the thing, for example. The difficulty with a higher state of consciousness is in principle no greater.

So, what *is* testable is not the subjective content of any experience. But, *claims about* experiences, such as, "Oh, this experience is blissful.", are there. For, if a person claiming to be full of bliss is a SOB (has a very nasty disposition), then you can reasonably doubt, all other things being equal, whether that person is experiencing so much bliss after all. And, even questions, such as, whether or not pure consciousness is actually (as well as merely appears to be) underneath all reality, can be tested also (as discussed earlier). Does an experience have a given effect? Does it make people happier? Every such claim can be tested. So, science has a *huge* task that it *can* accomplish here. It is not validating the internal nature of the experiences. But, science can evaluate, validate or falsify all the objective external claims about the experiences that can be made. So, it is no more resistant to science *in principle* than anything else. And, it is absolutely the imperative task of science, in my opinion, to do that now, for humanity.

Prof Kireet Joshi: I think, we have taken lot of time from everyone, and we should come to a final conclusion. I would simply say that the success of a seminar is not the answers it gives, but the questions it raises and leaves everyone thinking, reflecting and giving partcipants the oppertunity for exploring further. From that point of view, you must have seen that this seminar has been highly successful. On behalf of the participants, I should like to thank Swami Prabhanandaji with all our hearts. We feel that you have done a tremendous service to our country, organizing this beautiful and very enriching seminar. We wish that you continue the series because it is a very fruitful subject, very important subject for our century. And I think, you should continue with the fourth seminar on the same subject. Thank you.

Vote of Thanks

PROF. A. K. SHARMA

On behalf of the organizing committee of the Institute and Swami Prabhanandaji, it is a pleasant duty for me to thank all the participants, who have participated in the seminar on 'Consciousness: A Deeper Scientific Search.'

There is no doubt, as I felt and Prof. Kireet Joshi too just now mentioned that it is not the end of the endeavour, the scientific search of consciousness. It is the third day of the seminar with a series of sessions. All the participants, in the different sessions as were initially planned and organised, expressed their views regarding the levels of consciousness, identification of consciousness, the seat of consciousness, how it can be realized, along with the strategies of studying consciousness, analysis of consciousness, through different beliefs, and finally different methods as practised in different countries. All these aspects have been discussed in the last three days in an extremely methodical way and each and every speaker, as well as the co-ordinators, contributed to the success of this conference. I am, indeed, extremely thankful on behalf of the organizers for your excellent co-operation for the success of the symposium.

For holding this symposium, the financial assistance has been received from the Council of Scientific and Industrial Research, Government of West Bengal, and the East India Pharmaceutical Company. To all these organizations, we express our heartfelt thanks and finally, I thank all of you, once more.

APPENDIX

Quantum Mechanics in Relation to Healing

E.C.G. Sudarshan

The Nature of the Quantum World

Experience of the world when carefully codified, so far as it pertains to the physical world, constitutes physical science. Physics, on the one hand, outlines a protocol to make careful observations and carry out experiments. Quantitative physics, as we know it, may be traced back to the Elizabethan Age. Prominent amongst the scientists of that time, we have Galileo Galilei and Isaac Newton. By careful observations and logical analysis, Newton formulated the three Laws of Motion. The basic objects were 'particles' which had no size or structure but possessed mass, and its instantaneous position and momenta were the subject of the Laws of Motion and described the motion in terms of mutual forces. The emphasis was on these elementary entities which were 'separate'. Any more complicated motion could be described in terms of suitable collection of particles. They could constitute rigid bodies as well as deformable (elastic) bodies and could be extended to the study of fluids. The essential methodology is the analysis of the system into particles. All complex systems had to be studied by way of analysis. Distinct objects could exert forces on each other, maintaining their separate existence. In chemical processes where the substances change, it was reduced to the study of immutable elements which made composite objects. This atomic theory was a part of the *vaisesika* system, as formulated in his *Kana Siddhanta* by Kanada; but most people ignore this and attribute it to Democretus. These 'atoms' were useless for any study and it was only after John Dalton discovered the law of combining weights and introduced atoms with valence that Kanada's model was realized.

Thus, in considering existence and change, the changes were described but the nature of existence was left alone. Change was related to motions and was described by the laws of motion. These were 'processes', but existence had objects with qualities. Qualities and processes were quite distinct categories. Qualities were simultaneously specifiable and could be characterized by numerical measures, but processes depended on the order in which they occur. Processes do not always commute. Shoes and socks can be simultaneously described; but putting them on one's foot is different. We should put socks on before the shoes; it would look quite awkward otherwise. Properties are like the numbers at the beginning of a problem, or at the end of the calculation. But, the processes of multiplication and addition, etc., do not commute. In more abstract mathematics we could have these operations on noncommuting quantities themselves; in this case, the distinction between existence and processes is lost, but the scheme is more unified. This is the case in noncommutative algebra.

Substance and Process: Existence and Change

When we proceed to deal with subatomic physics, the discipline of classical mechanics is insufficient and inapplicable. Instead, we have the discipline of quantum mechanics in which existence and change are described in terms of a more unified point of view. But, in this quantum physics, not all properties can be simultaneously specified. Further, when a quantity like energy is measured, it may take only discrete values. Such a discreteness is very welcome in atomic physics. Once energy is measured in units of the frequency it shows discreteness, a property long known as the characteristic spectrum for each element. Even before an explanation for this discreteness was understood, it had been used as a reliable indicator of chemical composition.

Before concluding this section, we may recall that our experience of the world is not commutative, and we cannot always separate processes and initial conditions. In the world of mental experiences, thoughts are both processes and content. We cannot distinguish them from each other except in stylized verbal

communication. This is why creative processes, either in science or in the arts, are really indescribable. All accounts of discovery are fables!

Because of this higher level of synthesis new experiences and circumstances evolve. Since we can no longer specify all the initial conditions in the same way, as long as we insist on using classical pictures, since this is not a mathematically incorrect procedure, the values are not correctly specifiable. This limitation that there are no adequate classical pictures, any specification must be uncertain. A quantitative specification will have uncertain values. This is the basis of the principle of uncertainty. Needless to say, despite this inadequacy of the classical language, the quantum state can be specified and the evolution of the system is unambiguously determined, but in quantum language.

Superposition and Quantum Entanglement

A hallmark of a quantum system may be specified as either by A or by B. There exist states which are neither A nor B, but a complex linear combination of A and B. These are called superpositions. Further, if we had two particles and two states, AB and BA are assigned to them; and now consider a superposition of the two states. This state is strange: if the particle 2 is measured, it could be either A or B with 50% probability. If we measure particle A, it will be A or B, 50% each. But, if we measure particle 1 and about the same time we measure particle 2, we will find that they are anticorrelated, however far they are. Einstein, Podolsky and Rosen had pointed out this circumstance and they thought, it pointed to an incompleteness of quantum mechanics. But, Erwin Schröder then pointed out that 'quantum entanglement' is a characteristic property. Nowadays, we use this property in 'quantum computing' and 'quantum teleportation'.

These circumstances give us an entirely different world picture than in previous stages. The specification of the initial state is to be according to the selection of a set of commuting dynamical variables and the final configuration would be a well defined quantum state but there is no way of assessing it in terms of classical variables. If we insist on doing so, we do get probability distributions. Any

particular measurement would give one of the allowed values which is not fully predictable, instead of recognizing that samples always give some of the allowed values, which one is not predictable. This distinction of the sample from the probability distribution evolves also in quantum mechanics. Despite this, many people talk of unspecifiable disturbance of the system by the measuring apparatus. We need not postulate such mysteries and quantum jumps. We need only remember that classical specifications represent a quantum system only in terms of probabilities. And, quantum entanglements cannot be represented in classical pictures.

Body, Mind and Spirit

How do these observations impinge on our perspective on disease and healing? Just as in physical sciences, there is the temptation to take the human body as consisting of interacting parts and to believe that if we understand it properly, all diseases can be faced and healing will result. The observation on the structure and functioning is carried out by the medical practitioners with the assistance of clinical laboratories and modern sophisticated devices.

The moral of the story is that, quantum mechanical world gets distorted when we insist on a 'business-as-usual' classical description; we get paradoxes and uncertainties. Non-locality and non-causal correlations arise from such an attempt. These distant (non-local) correlations urge us to reconsider our presumptions.

What would make such entanglements to become diluted or ineffective? If there are other entities which develop correlations and get replaced by yet another, we get the process of 'decoherence' which tends to dilute or eliminate entanglements. This process is called 'relocation', though its effect is to reduce the quality. We rely on this mechanism to pick strictly non-entangled quantum system.

Healing

Let me now comment on healing and dysfunction. There is the temptation to base the human being on a physico-chemical model, to start by analysis and look for the laws of function on cause-

effect chains. Almost all such formulations consider the person as composed of separate parts interacting with each other by physical or biochemical reactions. 'Mind' is accepted grudgingly and considered to be a complex of body mechanisms. In such models, the brain is the locus of mind and all functions of the mind are aspects of brain physiology. There are physicians and biochemists who specialize in the workings of body parts in relation to manufactured drugs; and the healer has to rely on these 'scientific' tools. Yet, the 'mind' does not seem to be tamed by chemicals, at least, not in all cases.

Healers know that healing is an art and involves the resolve (*samkalpa*) of the healer to bring about complete healing. The medical art, the healing, is dependent on the interest and mutual trust of the patient and the physician.

At this point, we should make use of the lessons from the circumstance of a classical description of a quantum system. For many purposes this would be useful, but it cannot deal with exceptional cases of 'superposition' and quantum 'entanglement'. When there is entanglement, it cannot be reduced to the properties of two subsystems, separately. From our experience we find such situation where two physicians of equal technical knowledge have administered the same medicine, yet, in one case, there is healing and, in the other, there is only a marginal improvement.

One of the components of healing is the feeling of wellness and of restoration of the spirit. Could biochemical means lead to this? The answer is in the affirmative in most cases. There are growth of the increased reliance and consumption of drugs. But, traditional healing methods are using meditation, natural medicinal plants and restoring the sense of personal worth. The body-mind complex can be healing from either side. Restoring a person's spirit is an essential part of healing.

The connection between the body and mind, or more generally, between the physical and spiritual components, exhibits great similarity to quantum entanglement. What is the composition or nature of the human being? If there are components, what are

they? Everyone would agree that there are the body and the mind. The body reacts to not only the direct action of the mind, but even without being conscious, it could affect the body. I recall, the first time I had hiccups, my mother put me into a state of anxiety and anger at being accused of some action or another; it cured my hiccups. I have, in turn, used it on my children. Anger that makes the body assume a defensive position dissipates when someone engages you in conversation, or you yourself notice that when you ask yourself why you are angry, anger dissipates and the body relaxes. Extreme sorrow or trauma can make your hair turn white overnight.

But, apart from all this, at the time of extreme distress, some stray thought comes to soothe you. Where did the thought come from? It is not dependent on any chain of thoughts. Yet, the thought does appear and tends to heal you. If it comes from the thinking mind, we could ask, how?

Is the mind 'inside' the body? It appears not to be so, since the mind seems to be at places distant from the body. It also seems that in some context the mind is not limited by time. We could relive the past and be able to foresee future events. But, in all these cases, the mind seems unable to have the chain of thoughts. So, it may be advantageous to distinguish the logical processing mind from the extraordinary functions. As for 'conscience', let us call this aspect of the person, the 'spirit'.

Body, Mind and Spirit in Reaction to Healing

In healing, in addition to the body and mind, the spirit may also be involved. We are familiar with the value of dialogue between the patient and the healer. With or without medicine, this dialogue helps cure the body by healing the mind. Of course, in psychotherapy, this dialogue is the principal modality. But, there are processes of healing which seem to take 'no turn'; a sacred spot, the presence of someone held in high esteem do cure people. How? Since body and mind seem to operate in time and space, we should look forward to the spirit that gets positively entangled with any healer. Is this similar to the quantum entanglement? If it is, we could also expect

decoherence mechanisms; objects and processes that disturb the connection of the spirit with a healing agency.

Concluding Remarks

Quietening of the body and mind by meditation seems to lead to disentanglement with assorted events and agencies and get the spirit to be unsullied. Patanjali tells us that random thoughts may be quietened, and this is Yoga. Extraordinary refined abilities of the mind and the spirit would become accessible by careful and repeated practice of Yoga. In the context in which we talked of the spirit, we may understand this to be allowing the spirit freedom of action. While we may not be interested in acquiring extraordinary abilities, a healer does this, even if he is not doing Yoga as prescribed.

The action of the spirit may be discerned in other contexts. In imparting knowledge at a deep level, the same communication may enlighten one student while doing nothing much for another. In the process of scientific discovery, one may again discern the role of spirit. The correct clues to the discovery appear spontaneously in the quieter mind of the scientist. Possibly, the same thing happens for writers and artists. In all these situations, we have similarity to quantum phenomena rather than to mechanistic functioning rationally.

I do not suggest for a moment that healing involves quantum mechanics. My only purpose was to show the close similarity between the unusual (non-classical) features of quantum mechanics.

"Yasya smarana matrena jnanamutpadyate svayam
Ya eva sarvasampraptih tasmai srigurave namah."

I bow down to my spiritual guide (*guru*), whose mere remembrance itself produces consciousness and who himself is the be-all and end-all.

Delving into the Depths of Consciousness

J.N. Mohanty

In this paper I will present before you an experiential aspect of consciousness. I will pursue the question, how precisely consciousness is experienced by us. The method that I will employ is reflective. By reflecting on experience, I intend to bring to light levels of experience of which we have some awareness, though not a clearly articulated consciousness. Reflection will bring to awareness what we all along have been vaguely aware of.

Let us start with the *surface level consciousness* which is a blending of three aspects in waking experience: (1) awareness of the world, (2) awareness of one's (in this case, my) own lived body and (3) self-awareness of consciousness itself. At this point, I will only make a few simple remarks on these three aspects of surface consciousness. Each aspect is a pre-reflective, non-objective or non-thematic awareness. Neither the world nor my body nor my experience is initially presented to my consciousness as object (as an object of thought is), all three I am aware of, but do not objectify. One comment about 'body': I said that I have always, in surface-level wakefulness, an awareness of my *lived* body. The expression, '*lived* body' is important. My own body is not presented to me as an object, as your body is. My body is not presented in my consciousness as a *thing*, as a material object is. My awareness of my body is not dissociated from my living, my embodied existence.

These three aspects are blended together in an intimate manner. They are dependent parts of the totality of my conscious life at any time, and form the non-thematised background for thematic experiencings of entities belonging to the world, such as, the

physical things which stand out for my perception. Thematic and non-thematic intentions, abilities, acts and affections, interests and feelings, memories of the past and hopes for the future, imaginations and phantasies, all these merge into one another, interrupt as well as 'yield' to each other. Time flows, sometimes unnoticed, sometimes noticed, then planned out and measured. Wakefulness fades into sleep, dreaming sleep into dreamless sleep from which there occurs a waking up, slow or sudden, picking up where one left.

From this surface consciousness, one can ascend to greater and greater heights, or to deeper levels, or, without changing gears, extend the scope of one's consciousness on the same level. I am aware that I am using metaphors when I speak of heights or of depths, or, as in the last case, of horizontal movements. In this lecture, I will not develop the idea of 'horizon' and 'horizontal' movement of consciousness, nor will I address the idea of heights of consciousness. A simple appreciation of the first may be had if we imagine a searchlight whose scope increases, gradually illuminating regions on the same level of the earth, which were before in dark. With training, one can take in more things into one's conscious grasp at a time, in 'one fell swoop' as it were, than most of us are capable of doing. Extraordinary feats of numerical calculation and retention, in memory, of complex number series, are only too well known.

What does it mean to ascend to *higher* levels of consciousness than our ordinary surface level? Especially cultivated souls may develop special sensibilities for values, such as, moral goodness, social justice, or for beauty in nature around, or for spiritual reality being manifest both inside and outside. Such sensibilities pervade everyday lives of ordinary people, but when they reach a height, they transform and transmate our surface consciousness. Things must then be appearing, and so also consciousness of things, as though suffused in a new light. One then speaks of, in generic terms, moral, aesthetic or spiritual consciousness. I will not stop to describe these modes of consciousness. Literary authors, poets,

morally heightened souls, and mystics of many sorts have authentically described these heights as compared to the monotonous plains of everyday surface consciousness. Metaphorically, to be sure, I am calling them 'heights'. The same metaphor gives an idea of depths, upon which the designation 'depth psychology' is based, explored, in psychoanalysis, not by the ego himself, but by the ego in conversation with the analyst, as from the darkness of forgotten early childhood, from the long forgotten and buried archives, experiences are retrieved into daylight, bringing about therapy and peace. It is as though these depths are the 'sites' where 'traces' of surface experiences are stored, the Buddhist *alaya*, Freud's unconscious, and call for, in the shape of conscious pressures, recognition. The rest of the story is familiar.

Such heights and depths, ascents and descents, shall I say, super-consciousness and the 'unconscious' are themes of possible psychological descriptions, and then, of philosophical lessons.

Today, in this lecture, I will speak of '*depth*' in another sense. Most philosophers have failed to notice it, and yet it, i.e., this depth, determines, rather constitutes the surface consciousness in a more important sense. It is as though a sub-terranean stream flows unrecognized underneath the surface, a new depth in a different dimension. In order to bring this to light, let me draw your attention to the *temporality* of consciousness.

Things in the world, things which are objects of consciousness, are all in time. Consciousness is not only in time, but is temporality itself. The world-time may or may not flow, but consciousness flows. Let me focus on the flow of consciousness, to the utter exclusion of whether the objects of consciousness, the things of the world, are enduring or changing. For consciousness, I will also use the word 'experience'. My experience is at any moment, a 'now'. This 'now' consciousness, at the next moment, becomes a just-past, and is replaced by another, a new 'now'. If we focus only on this series of perishing 'now's, we run into serious philosophical problems regarding the nature of consciousness. This

is what some Buddhists did: only the 'now' *is* a perishing moment, in which case we would have no experience of the past or of the future, and we would never apprehend an enduring object. The *Naiyayikas* realized the problem in the case of understanding the meaning of a sentence uttered by a speaker. We would have a series of understanding of the meanings of the constituent words, when do we understand the meaning of the entire sentence? At the last moment of hearing? But, then, the earlier hearings have to be remembered, and, the last hearing would perish, and we would have memories of memories *ad infinitum*. Kant realized the problem, and held, like the Yogasutras, that consciousness must be able to *synthesize*, unify, the different nows, but that would need recollecting the past nows and then putting them together. When does all this take place? Imagine, I am listening to a musical performance, with eyes closed — focussing on my auditory consciousness. At every moment, I am having a sound-sensation, which next moment becomes past, and I hear another sound-event. When and how do I hear a continuous melody?

This problem shows that the picture of consciousness as consisting of a series of perishing instants of consciousness-events would not do. A more accurate picture is rather this: The now is always *also* an expectation of what is not yet, and also a retentional consciousness of what is just no more. Thus, the present, the just-yet-to-come future and the just-no-more past are all three together. As a new now emerges, the expectation is actualized and the past experience of the present is now modified into a continuing holding-in-grip of what is no more. The now thus sinks back into the past; a new now that emerges suffers the same fate. The temporal position is retained, but it, as it sinks back, becomes less and less clear until it recedes into the darkness of 'forgetting'. All experience flows away. Consciousness is a perpetual Heracleitean flux.

In this process, the only solid experience is the present with its horizons of the not-yet and the no-more. The three together, centred around the 'now', may be called *the living present*. Like the 'here' from which I look at the world, the now is the point of

temporal orientation. But the *now* is nevertheless a shifting point, a 'cutting edge', 'new', but becoming past and leaving its 'traces'. The Buddhist tried to capture this vanishing trace.

Let me recapitulate. The surface consciousness presents objects as *things*, with a certain stability, duration, a relative permanence, a same-ness. Everyday I see the same house I pass by. The world is a world of *things*, consciousness presents this world. At a deeper level, consciousness is a flux, of sensory experiences, in which the *now* pretends to offer a stability, but, as we try to come to grips with it, dissolves like a dew drop into its traces. The surface picture is that of the realist *Naiyayika*. The deeper truth is the one the Buddhist offers in its stead. *The Vedantin is waiting on the horizon.*

Just ask: how is this flux given? If to be conscious, in reflection, of this flux needs another flux (of reflective consciousness), then we will be caught in an infinite regress. How to avoid this regress? Let us call the ultimate, the last flow of consciousness, *transcendental flow*. Is it an unconscious process or a conscious process? In the former case, it would be *life* itself, the experience — of living. Consciousness would then have its ground in life. In the second case, the flow would be a conscious flow of consciousness, but *not* anyone's consciousness, with no 'I' as its owner and no *thing* as its object, without *ashraya* and without *vishaya*. The Advaitin gave the best, through negative, description of this level of consciousness: *avedvatve sati aporoksha-vyavaharavogyatva*. Without being an object of consciousness, it is capable of being 'immediate'. The Buddhist flux is grounded in the Vedantin's 'standing, unchanging, awareness'.

This experience of the standing but streaming consciousness is at the root of all human situation. The streaming is a ceaseless wrenching from, separation from, the presence; it is a series of 'traces' of a *lost* presence. There is the insatiable desire for oneness with being as presence, never achieving it, always stuck with *difference*, the source of *dukha*.

A flip side of this running *after*, but never reaching being as presence, is *the experience of standing*, of the fullness of the

living 'now', even the trace is 'now', the difference is 'now', all tearing away from presence occurs within the 'now'. The difference, the streaming, the search for fullness of presence is only an illusion, *mithya*.

The *alternate descriptions* of the experience of temporality. A third possibility is for *thought* to combine the two in a conceptual syntheses of identity and difference, of presence and absence, of permanence and change. Concept prevails over experience, as in Hegelian metaphysics.

Three philosophical possibilities within the heart of one experience of the temporality of consciousness! What a pity that our thinking about consciousness knows only of the familiar surface experience, and knows nothing of the hidden springs of that familiar structure. Psychoanalysis has brought to light a depth which is a replica of the same surface structure, the unconscious contains the same thoughts, desires, love and hatred only as forgotten. The true depth is the experience of temporality itself, of which I have presented a picture, but to be sure, only in a few simple strokes.

Let me sum up:

I find (1) that my surface waking consciousness is pervaded by 'horizontal' features discovered by the *Gestalt* psychologists, constituting a *field* of consciousness; (2) the potentiality of heightening the plane of consciousness through self-cultivation; (3) a depth of the unconscious, unrecognized but retrievable by psychoanalysis; and (4) a subterranean streaming flow of consciousness, which is at the same time experienced as standing. This last, i.e., (4) itself generates various possibilities of experience of consciousness which have been barely hinted at.

Problems with Our Knowledge Domain

V. S. Ramamurthy

Distinguished participants, good afternoon to all of you. I must thank the organizers for giving me this opportunity to be with you today. When I was invited to be here, my first response was to regret it. Neither I am an active worker in this area, nor I am a specialist in this area. So, I said, 'No'. Then, my friend, who is sitting here at the end of table, insisted that I should be here, because the subject is so complex and so important that even the views of a professional, however ignorant he is, have some value. So, finally I said, 'Yes', in a weak moment. That is why, I am here.

I am going to bring you a very very pedestrian level. It is true, quantum mechanics is not fully understood in the sense that the final word has not yet been said. It is a part of the evolution. It is true, there are still many loose ends, but it has not stopped us from going ahead and working on nano-technology. And, I hope that the whole world will change as a result of it. It is just an application of whatever we have known, however incomplete it is. And, the same spirit was also expressed in the last speech. We may not understand everything, but the fact remains, what we understand, we can move forward on that. What can we gain out of that?

I have been in this business of managing SNT. I am a scientist myself, but managing SNT for almost a decade now. In several discussions, in one such with Prof. Bhattacharyya, we found that there is something which we are missing. What I am going to say or actually highlight is, what are we missing and what we can know on the basis of our prior knowledge, irrespective of whether we know everything or not, whether the last word has been said or not.

I am a scientist, practising scientist, not because I am a Ph. D., not because I published papers on Nuclear Physics, not because I am Secretary, Science and Technology, and not because I am expected to be responsible for the growth of science and technology in this country; but because, I absorb, I try to understand, analyze, and keep doing it. By that definition, everyone around this table and outside, is a scientist in some way or other. Every human being thinks, goes through the same process to varying degrees. All of them are scientists. It is in this spirit many of the major scientific contributions in the past have been made through curiosity to know. But, you again look at it. I have a Ph. D. degree, which says that I have been trained to do research, a kind of thing Prof. Shear was asking. 'Can you do this and show me that this is a repeatable result, does not depend on who is there and who is not there?' The same kind of training has been given to us, if it is a scientific investigation, it has to follow certain norms.

I have a certain domained knowledge in Nuclear Physics. But, there is one difference. I am part of the scientific work force. I do the research, I get paid for it. Not necessarily, I do it all the time having curiosity to know. And, there is a very large work force of my kind across the world. There are people who do what they want to do, because they would like to do it, but suddenly that number has become small today, across the world.

The second thing is that whatever I learn ultimately belongs to the person who pays my salary. The person who pays, also sets a tune for this and consequently, today knowledge, irrespective of how you have obtained and when you have obtained and why you have obtained, is a property which is owned by somebody, which will be traded by somebody, and may not be traded for the right reasons. So, this is another scenario. So, effectively, there are two aspects. There is a difference between scientists and science work force and we have a majority of scientific work force today than scientists.

The second thing is, knowledge is no longer in public domain. A century earlier, in this town, J. C. Bose said that knowledge

must be in public domain. Even today, the Government does not say so and I do not say so too, because if I say, I will not get the necessary fund. I have to say that knowledge is something which needs to be protected, sold and made commercially payable.

Both have had major impacts, the way science is being done, the way technology is being developed, the way it is being put to use. The last hundred years is probably the time in which this transition took place.

Now, two or three things which are happening led to this. I will mention just one or two. The first exploitation of the scientific workforce was, probably, the man hunting project. That time a large number of scientists were brought together, were told 'this is what you have to do and you will get paid for this and if you do not like doing it, get out. Or, you may go beyond that.' That was the first time when the scientists were told to do something and were not told, 'You do what you think to be interesting scientifically.'

It had its own good and bad sides. The good thing is that it led to a very focussed effort, led to a large number of new understanding of the scientific world, material world, in particular, and led to a large number of spinoses. So, the next phase of the world is the emergence of technology-based enterprises, business — where a large number of gadgets appeared, a large number of products appeared in the market. People learnt how to make money, abusing this. It is technology arising out of such coordinated research programme.

The third thing is, the companies were restless. 'Why should we wait for somebody to develop the technology? Why cannot we ourselves invest on this?' Corporate researches came into picture. So, we had the IBM laboratories, we had the telecom, LTT, so many different laboratories. Today we find, 'contract research'. You say, 'I have this much money, I want you to work on this. If you can do it, and if you are interested, here is the money and go ahead and do it.' Contract is as such. That is the research position today. Everybody expects returns. This is another problem, because once I invest, I want some return on my

investment. It is unfortunate that even the Government expects returns of investment. So, once in three months, I have to submit a report of what progress has been made and what are the deliberations as a result of the investment.

We have learnt a lot out of these. The economic returns have been extremely visible and people are interested in it. They are expecting more economic returns. These are the positive points. But, there are two negative sides which we have been concerned with. The first and foremost, probably recognized earlier, is the lack of equity. In the economic returns, as I mentioned, a man who pays, gets the result and it is, obviously, in the hands of a few people, may be, a few countries; may be, a few multinationals, it does not matter. But, the fact remains, there is definitely some lack of equity.

The second concern is the use of resources, extremely large use of resources. You know very well, 80% of the resources is consumed by 20% of the people. Consequently, in the Western world, developed world, the per capita consumption of energy is almost 20 to 30 times more than what is there in the developing country. On the other hand, you might have seen yesterday a newspaper report from world watch Institute or somewhere, that India must try to reduce the use of non-renewable energy sources. There are conflicts in these. How can one group of people continue to spend more and consume more and another set of people continue to reduce their consumption? This is just not possible.

More importantly, if it is equity, then all the people irrespective of area would like to reach the highest level of development. It is quite natural. You cannot blame them for doing that. But, if already there are concerns about available natural resources; if everybody reaches the top, you have no resources available. This also brings in certain ethical and moral issues, like if you spend all the resources today and leave your grandchildren without any resources, are you justified in doing such a thing? What do you do? How do you handle this kind of things? This is another problem.

Most importantly, we have now started seeing a totally aspiration-driven society. Everybody wants to get more than what he is having today, because if you want to reach the top, there is always one person at the top. Everybody reaches the top and he wants more and there is no end to this at all. So, we are reaching a situation where the development paradigm is totally non-sustainable. It brings in issues which are not being addressed at all today. So, one of the issues is about social consciousness. Can we afford to develop one part of the society at the expense of the other? You may recall, in 2003 we brought the new science and technology policy for this country. For the first time, in that policy document there was an explicit reference to the interaction between scientists and social scientists. The reason was very clear. (1) The development itself depends on those who are we talking of. I remember an anecdote. Somebody in late 90s used UNDP funds, in a Rajasthan village. There was a drinking water programme. Rajasthan is known for scarcity of drinking water supply. So, there was the tap water supply provided to a village. The tap was getting broken everyday, every night. So, they tried to find out who was breaking the tap and they found out that it was one lady in the village who was doing that. 'Why are you breaking the tap? You are also benefited.' She said, "What benefit are you talking of? Everyday I use to walk 1 km to bring a pail of water. We all used to go together, used to sing, dance. We had a group outing for all the ladies together and used to come back. We used to do all these things. Today you have brought tap-water on to the door-step. My two hours of outing is gone. I cannot go out and sit like my husband under a banyan tree and discuss the social issues with other ladies in the village. It is not possible. More importantly, my husband says, 'Now you do not need to go out for water. So, why don't you do some more work'? He has given me some other work. So whose benefit you are talking of?"

The message was very clear. The best technological solution is not the best solution. The social issues are very different. And, the scientists are not the community of people who understand the

social implications of any new technology. Now, today whether it is building of dams, whether it is building of any other facility or cloning, this kind of discussions are coming, again and again. The messages which we are getting is extremely disturbing because one country says, 'We must do this for the good of humanity', another country says, 'We should not do for the good of the whole of humanity.' One person says that this knowledge should be in the public domain. Another one says, 'No, we have paid for it. It should not be in public domain'. So, the whole discussion is getting vitiated and we are reaching a situation where there is a very clear-cut need for a very strong dialogue between the scientific community and the social science community. That alone does not solve the problem. We can bring in equity but because of the aspiration driven nature of the society, no individual will ever become happy or satisfied with the growth. Today, there are more suicides and frustration among the highly paid people than among the low paid people. In the entire segment of information technology, there is a serious problem at mid-level. At the low level, they are all very happy. They go, get the money, splurge it anywhere; afterwards as time passes, they get into more problems. So, internally in collaboration something has to be done. We look at it. You need development. You need equilibrium in development. One is an external equilibrium vis-à-vis with your neighbour and other members of the community and also including the bio-diversity animal kingdom, everyone of them. But, we also need an equilibrium, internal equilibrium. Then, we have been asking 'What is internal equilibrium?' Our dialogue invariably ends up in understanding why we are here. What is good for us? What is happiness? All these issues, again, are the same talking point in a dialogue among people who discuss consciousness. This is in this context you were discussing earlier that you look at consciousness in one way, I look at consciousness in another way, but we seem to be discussing the same thing. After hearing the previous lecture, I am getting even more exited about it, because if a rat can learn something with one shock, I am sure, a recipe can emerge which

will ensure that your value system gets changed as a result of certain things. We have seen examples of this. There are many people who go for Shri Shri Ravi Shankar's programme or art of living programme or any other programme. People claim that they have benefits, their stress levels have come down, there health has improved, asthma has come down, their sugar-level has come down without any medical intervention. Not all can be ruled out as simply psychological, and the early presentation very clearly showed that such steps can make big internal differences.

The obvious question for us is: why do we especially discuss what is consciousness? Is it there only in human beings or is it there among other animals? Those things can be left to the experts. Can we have a technology of consciousness which will tell us that these are the kinds of things which we should inculcate among the children of today, among the youngsters of today, among the old people of today, so that their quality of life improves; their assessment of what is development, what is not development changes and ultimately we end with human society which is on the whole better than what it was yesterday? This is a serious concern for us. I do not have answers for that. Perhaps, this group of people who are here can say something. While we look at the science of consciousness, let us look at the technology of consciousness, and find out something, which can be delivered to the man on the road, man on the street. We will be doing a big service for the entire humanity.

I would like to stop here. I would like to hear more from you, rather than I continue my dialogue.

Single Genes, Single Neurons, Behaviour and Perception: Implications for an Understanding of Consciousness

VIDYANAND NANJUNDIAH

Introduction

Consciousness is a difficult phenomenon – or set of phenomena. Among the problems in trying to come to grips with it is the lack of a simple and generally agreed definition of the term. The problems might lead one to expect that the explanation of consciousness will be correspondingly difficult. It could, according to some, demand ways of thought and analysis that go beyond the domain of conventional science. There is another reason in support of such a belief. As many people understand it, consciousness is a property of the human mind. One may or may not agree with this. Even if consciousness is not uniquely human, it is certainly true that only we can discuss it whereas no other creature can. The human mind is rather recent in evolutionary terms. It is a product of the human brain, which has been called the most complex structure in the entire universe. Today we barely understand the functioning of simple brains such as those of the fly or the worm. Therefore it appears that it must be very difficult to find explanations for the properties of the human brain, including consciousness. All this may be true. But, I want to paint a less gloomy picture. I will do so by presenting analogies from contemporary biological research. The analogies show that there may be a simplicity underlying highly complex phenomena. I should point out that none of the examples that will be presented below deal with consciousness, nor do we have a complete explanation for any of them. Thus I cannot conclude on the basis of logic that they help us in our search for a scientific understanding of consciousness.

Nevertheless, the examples lend support to a certain point of view that I wish to get across. The point of view is that when faced with a difficult problem, we should not attempt to look for extra-scientific explanations, let alone throw up our hands, until we have convinced ourselves that the problem does not admit a scientific explanation. By presenting the examples, I wish to encourage the feeling that at least in terms of the underlying genetics or neurobiology, there is much to be gained by examining the issue of consciousness with the same optimism that we bring to bear when we look at other complex biological phenomena. Even though we may not understand consciousness for a long while, this approach should help in clearing the air.

The experimental observations that are to be described appear forbiddingly complex but offer indications of an underlying logic that may be simple. Before coming to the phenomena themselves, let me indicate, by means of another analogy, the spirit of what I am attempting. The analogy comes from the field of genetics, specifically from the area known as developmental genetics. Developmental genetics involves the study of how genes influence a dramatic transition that all of us undergo in our lives, from embryo to adult. One might say that the transition *is* life. This transition goes by the name of development. Genes play a role in development; but to say so is trivial. The reason is simple: we know that genes code for proteins. Proteins are both the building blocks of living cells and the means by which cells carry out metabolism and reproduction. It is obvious that proteins play important roles in development. Consider a protein that is necessary for the proper functioning of the heart. In an individual in whom the gene that encodes this protein is mutated and made non-functional, the heart will not develop. Therefore, the individual will not develop and will die very early in embryonic life. But, this is a trivial or obvious outcome. A more interesting statement could be made if a mutated gene would cause, not gross malfunctioning (as in the case just considered), but more subtle malfunctioning. A less than drastic genetically caused mistake might help us to

understand how the normal system works. Let us go back to a hypothetical gene involved in the development of the heart. Now, imagine a different mutation, one that does not affect the viability of the embryo but changes the relative volumes of the four chambers. Suppose, the changes lead to a small reduction in the pumping efficiency of the heart. If we could identify individuals with this changed pumping efficiency; if we could also establish that the change was correlated with a genetic (hereditary) change; and if we could pinpoint the gene in question, we would have learnt something of significance. We would be able to infer the existence of a gene whose product, a protein of a certain composition and structure, was implicated in regulating the relative volumes of the heart's chambers. Beyond that, we would be able to construct testable models of the precise link between the protein and the volumes of the chambers. By the way, this is exactly how things go in the field of developmental genetics. I proceed now to sketching, in the barest outline, three situations. I should stress that important features will be glossed over only because they are not essential for the point that I wish to make. Also, the references given are not to the original experiments, which should, of course, be consulted for details, but to commentaries which contain the appropriate citations.

Examples

1. Solitary or Social Feeding in the Nematode Worm: This worm, whose scientific name is *Caenorhabditis elegans*, lives in the soil. Its food consists of bacteria that also live in the soil. It was recently discovered that *C. elegans* occurs in at least two varieties in nature. There are those worms that feed by themselves (solitary feeders) and there are those that aggregate in groups while feeding (social feeders). Individuals belonging to the two groups differ genetically: each group breeds, it is true. But, the two groups do not constitute different species; they can interbreed. When they do so, the offspring are all solitary feeders. It appears that (in the language of genetics) solitary feeding is dominant to social feeding. Seen at the level of behaviour, there is a drastic

difference between the solitary and the social feeding life styles. However, seen at the level of genetics, the difference seems to be strongly correlated with a change in a single gene. I should be careful to point out that this does *not* mean that feeding behaviour is *caused* by a single gene. What it does mean is that at the level of behaviour, the difference appears stark; and at the level of genetic differences, it seems to be simple. The genetic difference results in changing a protein known as a neuropeptide receptor. One of the functions of this neuropeptide receptor is to enable the cell on which it resides to signal to other nerve cells. Eventually, the signal either favours or inhibits the coming together of feeding worms. Because, the protein functions differently in the two strains, different feeding behaviours result. There are also other genes in the story, but alternatives of solitary and social behaviour do not depend on genetic differences alone. There is a strong environmental component too. This is shown by the fact that the difference between the strains becomes apparent only when there is a rich supply of food.

2. Monogamy or Polygamy in Voles: The second example also involves behaviour, but this time in a larger animal. This is the vole, which is a small field mammal resembling the mouse. The example involves, once again, two varieties of behaviour displayed in two genetically distinct strains found in North America — sufficiently distinct in this case to be recognized as different species. The species are those of the prairie vole, *Microtus ochrogaster,* and the meadow vole, *Microtus pennsylvanicus*. The prairie vole is social. Male prairie voles form lasting bonds with female voles and are monogamous. They take care of their young ones. The male meadow voles are polygamous, tend to be solitary types and do not help in caring for their offspring. The pine voles (*Microtus pinetorum)* and the montane voles (*Microtus montanus*) have also been used for making some of the observations, because in this respect their behaviour is very similar to that of prairie and meadow voles respectively. Essential aspects of this major behavioural difference between the two species can

be pinned down to a single genetic difference. The gene involved codes for a protein known as the vasopressin receptor. The vasopressin receptor is a protein that — as its name suggests — binds to vasopressin, which in turn is another protein. Vasopressin is found in human beings too; among other things it plays a role in regulating water balance in the tissues. It turns out that the receptor differs between the monogamous and polygamous voles. One variety of the receptor goes with social behaviour and the other variety, with solitary behaviour. The two varieties differ in a single amino acid, which is the smallest possible unit in terms of which two proteins can differ. It is possible to convert one species of vole to another (only in the behavioural sense, of course) by injecting the appropriate form of vasopressin receptor protein into its brain. Instead of injecting the protein, the same result can be achieved more elegantly by making use of genetics – by transferring, using standard techniques, the appropriate gene. Again, what looks like a profound difference at one level is correlated with something very simple at the genetic level. Importantly, even here it is not all genetics; environmental influences are significant too. The range of monogamous behaviour in the monogamous species is such that at one extreme, you find individuals straying from strict monogamy. Correspondingly, what is nominally polygamous behaviour in the other species also spans a wide range; there are individuals who exhibit what looks suspiciously close to monogamous behaviour. This also shows that it is meaningless to speak of a gene 'for' monogamous or polygamous behaviour.

3. The Grandmother Cell: Of the three illustrations, this one comes closest to consciousness. It has to do with our attempt to understand how the brain makes sense of the external world. When we say we see something, exactly what is going on in the brain? The answer to this question has been, and continues to be, intensely investigated. Visual perception begins with the eye. Individual rods and cones register sensations of light and colour; and in groups, they sense contrasts between light and dark. As one moves further up the ladder of information processing, from these elementary

sensations, an increasingly sophisticated picture of the external world is gradually built up. The picture is composed of elementary percepts in the form of lines, edges, textures, movements, colour, etc. So, for example, in seeing a red bicycle, the elementary units of perception might involve the colour red, lines that correspond to the handle bars and frames, edges that correspond to the boundary between the bicycle and the outside world, movement, and so on. However, when we see red bicycle, we do not say to ourselves, "I see something red; I see certain lines and edges; I see wheels and spokes; ...". Rather, we say (in a sense) "I see a bicycle". Our brain forms a *unitary* percept of a bicycle. In the same way, we form unitary percepts of many other things that we see and recognize or have associations with. If we have a friend whose name is X, seeing the friend, or hearing the name spoken out, or reading the word X spelt out, is enough to conjure up a mental image of X. How does this happen? About 30 years ago, Lettvin coined the phrase 'grandmother cell' to indicate a simplistic but possible answer. A grandmother cell was supposed to be a cell associated with a unitary percept. It would be something like a focal point: signals from all the neurons which were stimulated by sensory impressions deriving from representations of that percept, would feed into the grandmother cell. One among the many grandmother cells would be *the* grandmother cell: it would respond exclusively to the notion of one's grandmother (presumably there would be two such cells, one for each grandmother). Lettvin indicated in subsequent writing that he intended the phrase 'grandmother cell' to serve as a parody, to serve as a facetious example of how a complex phenomenon (say of your brain being able to recognize your grandmother) could be analysed in over-simplified terms. The real solution, many assumed, would lie in complex brain circuitry that was excited every time you saw your grandmother or a photo of your grandmother or thought about your grandmother, or heard someone talking about her, etc.

To everyone's surprise, evidence that points in the opposite direction has been accumulating. Irrespective of the merits of the grandmother cell hypothesis when examined in detail, there are neurons in the brain that can respond to very specific and restricted stimuli indeed. Some years ago, it was found that there were neurons in the monkey cortex that were selectively excited when the monkey was shown a picture of another monkey, but very little by anything else. Similarly, there were neurons that were selectively excited when the animal was shown a monkey's hand, but hardly at all by something else. Most recently, the claim has been made — this time on the basis of work done with human volunteers — that there are neurons in the human brain that can respond selectively, not just to a human face, but to the face of a particular human being, or to seeing the name of that person spelt out. The names or photographs of well known television and film actors and actresses were used in these experiments. So, it appears that in human beings too, at least in some respects, an issue that is very difficult for us to formulate even — let alone to analyze — namely, the issue of how we recognize objects, could have a simple answer. Note that the existence of a grandmother cell begs the all-important issue of how it arises and what sorts of connections feed into it. The philosopher Patricia Churchland has strong things to say about being optimistic regarding our prospects for understanding consciousness via a materialistic approach. More importantly, she points out fallacies in some of the arguments advanced by those who take the opposite point of view.

Summary

Consciousness is, or is widely believed to be, a complicated phenomenon. Part of the problem is that there is no easy definition of consciousness that is also widely accepted. Consciousness would appear to be a property of the mind that is much more difficult to define than any 'standard' sort of sensory or motor phenomenon, which is already difficult to explain. Therefore, the usual argument goes, consciousness must be even more difficult to explain. This argument may well be correct. My aim is not to

prove otherwise. Rather, I have tried to point out that one should be cautious in jumping to the conclusion that phenomena that are difficult to pin down are necessarily also difficult to understand. While not attempting in any way to outline a possible route for the understanding of consciousness, I would like to suggest that one should not give up hopes of reaching a scientific understanding of one or the other aspect of it, an understanding that is based on conventional science. For reaching this conclusion, I have used reasoning by analogy: there are other seemingly difficult problems that seem, not just susceptible to scientific analysis, but, when looked at from the angle of genetics or neurobiology, also appear capable of being 'mapped' to simple problems.

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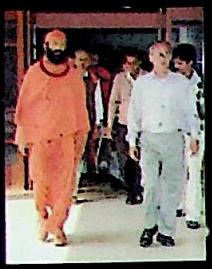

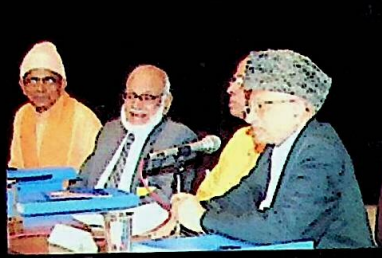

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